Agricu

NEW SERIES.

Vol. VI.

For the Southern Planter.

NEW YORK AGRICULTURAL STATE FA

Friend Botts,—It so happened that I could not attend the State Agricultura' Fair held at Auburn, this fall, which I much regret, as I have been informed by those who did, that it was, in some respects, superior to any of the former meetings of the Society. All speak in the highest terms of the location and tasteful fitting up of the buildings, grounds, &c., which reflect great credit on our worthy President, Col. Sherwood, and the spirited citizens of Auburn.

The show of stud horses is represented to have been superior to any former exhibition. The "Gifford Morgan," and one of his colts, a six year old, exhibited by Mr. Frederick A. Wier, of Walpole, New Hampshire, contributed not a little to the gratification of the numerous visiters present. The colt, as he was called, was purchased on the ground by a gentleman in the western part of this State for eight hundred dollars.

Mr. Wier, on his way home, stopped at Albany, which gave me an opportunity of viewing the old horse, and I assure you I was highly gratified. Notwithstanding he numbers twenty years, he has all the fire and vigor of youth, and is as supple as a cat. Although I had read and heard much of the Morgan breed of horses, my fancy fell short of the reality. He is, *every inch a horse*, and just such a horse as will always command a good price. His gait is short and quick, and his style of movement, great nerve, and courage, I admired much.—His temper or disposition appears of the mildest character. His owner assured me that the sire and colt stood quietly in the same stall, and the old horse appeared much distressed on parting with his son. The figure in the September number of the Albany Cultivator, taken from a daguerreotype miniature, though very poorly engraved, is a very fair representation.

Being low in stature, only fourteen hands and three inches high, most persons, at first sight, would pronounce him a small horse, but on further examination, he would be found a large horse in a small compass. He is said to weigh, when in good condition, over one thousand pounds.

This horse is noted for the great uniformity with which he stamps his progeny, and pro-

sec[illegible]s—two minu[illegible]
been sold from six hu[illegible]
lars. Six of his colts, a[illegible]
in England.

Mr. Wier also exhibited t[illegible]
of the Renssellaer County Agri[illegible]
held at Troy on the 22d instant,
tracted great attention and was mu[illegible]
by all who had an opportunity of see[illegible]
The committee, in their report on horse[illegible]
"That they are of opinion that for beau[illegible]
limb and elegancy of movement, this horse
have no superior. The reputation of this breed,
for road and saddle, is of the highest character;
they are what are termed among farmers, all-
day horses," which, I presume, means that they
will not travel so far one day that they cannot
return the next.

Mr. Wier being a non-resident of the county, could not enter his horse for the prize, but the committee voted him their thanks and an honorary premium.

Your favorite grey, the "Moss Horse," with a troop of his colts, all dark greys, from the sucking colt up to horses of six years old, were on the ground, and it was said by good judges, that a finer lot of horses and colts of one horse's get is seldom met with. This horse is also noted for getting fast trotters and roadsters. His colts meet with a ready sale and command high prices.

With a view of preserving in its greatest purity, and perpetuating the Morgan breed of horses, Mr. Wier has purchased all the mares, with the exception of one, (and that one he intends to secure, if possible,) which can be identified as possessing that blood in its high grade, from which we may expect the best results.

Truly, yours,

C. N. Bement.

Bement's Am. Hotel, Albany, Oct. 1, 1846.

SHOEING.

Few things are more neglected, and yet of greater importance to the comfort and durability of the horse, than a proper system of *shoeing*. It is necessary that the foot should be defended

Dec. 1846

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…ved, and the
…, but the *drawing-*
tion of sole sufficient
of the foot and to lay
…ontraction, corns and perma-
…. One object, then, of the looker-
… ascertain the actual state of the foot.
the descent of the crust, when the foot is
placed on the ground, depends the elasticity and
healthy state of the foot, and that may be satis-
factorily determined by the yielding of the sole,
although to a very slight degree, when it is
strongly pressed upon with the thumb. The
sole being pared out, the crust on each side may
be lowered, but never reduced to a level with
the sole, otherwise, this portion will be exposed
to continual injury.

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… destroys the crust.—
…f the shoe, and extended
… on the lower surface, a
…rough which pass the nails
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width of the shoe will depend on that of
…oot. The general rule is that it should
…tect the sole from injury, and be as wide at
the heel as the frog will permit.

The upper surface of the shoe should be differently formed. It should be flat along the upper end, outer supporting the crust, or, in other words, the weight of the horse, and widest at the heel, so as to meet and withstand the shock of the bars and the crust. The inner portion of the shoe should be beveled off, in order that, in the descent of the sole, that part of the foot may not be bruised. The owner of the horse should occasionally be present when the shoes are removed and he will be too often surprised to see how far the smith, almost wilfully, deviates from the right construction of this apparently simple apparatus. The bevelled shoe is a little more troublesome to make and to apply than that which is often used by the village smith, but it will be the owner's fault if his directions are not implicitly obeyed.

Even at the commencement of the operation of shoeing, the eye of the master or the trustworthy groom will be requisite. The shoe is often torn from the foot in a most violent and cruel way. Scarcely half the clenches are raised when the smith seizes the shoe with his pincers and forcibly wrenches it off. The shrinking of the horse will tell how much he suffers, and the fragments of the crust will also offer sufficient proofs of the mischief that has been done, especially when it is recollected that every nail hole is enlarged by this brutal force, and the future safety of the shoe to a greater or a less degree weakened, and pieces of the nail are sometimes left in the substance of the crust, which become the cause of future disease.

In the paring out of the foot, also there is frequently great mischief done. The formidable

The heels often suffer considerably from the carelessness or ignorance of the smith. The weight of the horse is not thrown equally on them, but considerably more on the inner than the outer quarter. The consequence of this is that the inner heel is worn down more than the outer, and the foundation is laid for tenderness and ulceration. The smith is too often inattentive to this, and pares away an equal quantity of horn from the inner and outer heel, leaving the former weaker and lower, and less able to support the weight thrown upon it.

Mention has already been made of the use of the *bars* in admitting and yet limiting to its proper extent the expansion of the foot. The smith in the majority of country forges and in too many of those that disgrace the metropolis, seems to have waged interminable war with these portions of the foot, and avail himself of every opportunity to pare them down, or perfectly destroy them, forgetting, or never having learned, that the destruction of the bars necessarily leads to contraction by removing the chief impediment to it.

The horn between the crust and the bar should be well pared out. Every one accustomed to horses must have observed the great relief that is given to the horse with corns when this angle is pared out, and yet from some fatality the smith rarely leaves it where nature placed it, but cuts away every portion of it.

The true function of the frog is easily understood. It gives security to the tread, and contributes expansion to the heels; but the smith although these cases come before him every day seems to be quite unaware of the course which he should pursue, and either leaves the frog almost untouched and then it becomes bruised and injured, or he pares it away so that it cannot come into contact with the ground, and consequently is not enabled to do its duty.

The owner of the horse will, therefore, find it his interest occasionally to visit the forge, and guided by the simple principles which have been stated he will seldom err in his own opinion of what is going forward there. He should impress two principles deeply on his mind that a great deal more depends on the paring out of the foot than in the construction of the shoe: that few shoes, except they press upon the sole, or made shamefully bad, will lame the horse, but that he may be very easily lamed by an ignorant or improper paring out of the foot.

Where the owner of the horse has sufficient influence with the smith, he will find it advisable always to have a few sets of shoes ready made. Much time will be saved, in case of accident, and there will not be, as is too often the case, the cutting and paring and injuring of the foot, in order to make it fit the shoe. More injury than would be readily believed is done to the foot by contriving to get on too small a shoe.

Stewart.

For the Southern Planter.

END IRONS AND AN ERROR CORRECTED.

Mr. Botts,—In my remarks, published in your late number in reference to corn houses, there is some error committed by you or my copying clerk, as I am made to say "*filling closely around these legs, plates of tin are sprigged to the under part of the sills*;" whereas, I intended to say, "fitting closely around these legs up near the sills, plates of tin, which are sprigged to the *legs*." My reason for putting the tin up so high on the legs, is that the rats may start to ascend before they reach the tin, and then they can't leap over it. But perhaps if the sheets of tin were sprigged (as I am made to say) to the under part of the sills, and then upon the sides of the sills also where the leg is connected with them, it might answer as well. I will now add that in putting the tin around the legs I do not make the edges of the tin meet on the edges of the leg or post, but in the middle, lest I may form some foothold for the rats, as they are sure to run up the corner of a post.

I have just invented, in my opinion, a very convenient end iron. Having long observed that in making fires of wood in fire places made of bricks, the wood falls close to the back and prevents the blaze and smoke from ascending up the back, which is apt to make it smoke, and in throwing on wood carelessly as many do, the back soon gives way and falls, and is said to burn out, when in truth it is broken down by throwing on heavy logs carelessly, especially when the bricks are hot and wood wet with rain or snow, and sometimes by crowding the wood on, the end irons are forced from the back and slip quite too far out. Now to remedy all these evils and inconveniences, and indeed to save expense of putting up backs that have fallen, I had a pair of end irons made in my shop of wrought iron, one inch square, and the bar on which the wood lies is riveted into a piece to form the leg at the back, which piece extends up the back some twelve to sixteen inches, and is shaped to fit the back (if a hanging one.) Now, by my plan the blaze and smoke can always ascend up the back, and if the wood should be thrown on wet and carelessly, it can't touch the backs, but falls against the irons, and the pressue being general, it does no harm. And in crowding the wood between the two uprights, the end iron cannot be moved out of its place, but stands firm. It is an improvement I have never seen nor heard of, and though very simple, I think those who may think proper to try it, will not regret it.

W. Timberlake.

Belle Air, Oct. 26, 1846.

We have no doubt that this is a capital improvement in andirons or end irons, as Mr. Timberlake calls them. The origin of the term is generally supposed to be found in the phrase shovel, tongs *and* irons. The derivation is not entirely satisfactory, and as orthoepists we should like to know how Mr. Timberlake derives his expression.

From the Indiana Farmer and Gardener.

WHEAT AMONG CORN.

The fourth number of the Farmer and Gardener contains an article from the Michigan Farmer which recommends the sowing of wheat amongst corn. On reading it, it occurred to me that it would be well for me to communicate my observations on the subject; my proper avocations have occupied my time, until now, that it is so late that neither good nor harm can be done the present season; but some observations may be offered for reflection against another season, and in that way some good may be done. Wheat amongst corn has always been a common practice here in Knox county. I know of two instances, and I have often heard of a third in an adjoining county, Sullivan, in which this practice seems to be successful. One of our old French farmers, Mr. P. B., has a field of twenty or more acres, along which it has been my lot to pass some hundred or more times each year for the last fifteen years. During this time this field has alternately been in corn and wheat, the wheat sowed amongst the standing corn, and has always produced fine crops, very good corn and good wheat. But, during all this time, nothing has been taken off of this field but the ears of corn and sheaves of wheat. It is a piece of level prairie. The corn is planted in four-feet rows. If broken down by the wind,

the corn is set up. Early in October the wheat is sowed and ploughed in with a small plough, four furrows in each row. Late in the fall the corn is gathered, husked on the stalk; and towards the end of winter the cornstalks are cut down and left on the ground. After the wheat is housed, the field is pastured until the next spring by stock remaining on it day and night. Under this management this field has certainly not deteriorated, and I am inclined to the opinion that it has improved. I have watched it for years, and am satisfied that the produce of corn and wheat continues above the average.

There is in the neighborhood another, who is celebrated amongst us as a good farmer, who lives comfortable, and is, I presume, most prosperous. His land is the very best of upland, heavy timbered, beach, sugar, walnut, and poplar land. It is a saying of this gentleman, Mr. B., which is often repeated here, that with him wheat does best when sowed amongst corn.—This Mr. B. has rich new land; but he always has some of his fields in clover, which he pastures with hogs; and thus undoubtedly keeps up the fertility of his soil in such manner that he cultivates, and successfully, the largest sort of corn raised in this county.

These gentlemen are both very good farmers; they plough deep; they work their corn thoroughly; and they do all things at the right time.

If P. B. cut up his corn, took stalks and shucks off the land, and if the stock, which was pastured on it, were taken off at night, undoubtedly it would deteriorate.

Those who have cultivated clover and pastured it with hogs or cattle know that the land becomes stocked with clover seed, which will germinate whenever the proper condition occurs. If a clover field is broken up and planted in corn, the clover will grow amongst the wheat, nearly as thick as if it had been sown. And however the growth of the clover may be kept under by the pastures of the stubble, the roots will remain in the ground and some of the stocks and leaves above all, with the manure from the stock pastured on it, to enrich the soil for another crop. In this manner, doubtless, the natural fertility of Mr. B.'s rich land is constantly preserved, perhaps increased; and under such circumstances the corn may be a necessary preparation for the wheat. Besides, Mr. B. is too good a farmer and too sensible a man to starve the goose that lays the golden egg for him.—He takes the largest sort of ears and lots of them out of his corn field, but generally leaves all else. It is well known that on strong clay lands wheat is apt to fall. This undoubtedly is, because on such land there is not convenient for the wheat a quantity of silex proportionate to the other sorts of food at hand. Now there is in cornstalks a large quantity of silex duly prepared for the wheat. The corn seems to have the faculty of extracting a sufficiency of silex from soils on which the wheat for want of this ability will fall. And, if I am correct in this, this may be another reason why, with Mr. B., wheat amongst corn does best.

I have often heard of a Sullivan county farmer, on rich clay upland, who has his whole farm all the time in corn, wheat, and clover.—He sows his wheat amongst the corn, and the clover he did sow on the wheat as long as necessary; now it comes without sowing. This gentleman's neighbors continually tell me that his crops of corn, wheat, and clover are always good, and, as he and they think, are regularly improving. He too undoubtedly leaves his stock on the ground.

Excepting the above three cases, I do not know of any like regular success with wheat sown amongst corn. I often hear of good crops of wheat thus sown, but I more often hear of such crops failing; sometimes straw fallen, sometimes rusted, but more often both.

And excepting the above three cases, I do not know of any farm, in an improving state, on which the wheat is sown amongst corn.

Most generally those who sow wheat amongst corn cut it up, before or after the wheat is sown, shock it in the field and feed it out during the winter to stock. In other words, the whole produce of the corn field is taken off of the land. This may do on the corn fields of New England—corn fields of two and three and four acres, so small that it is practicable to manure them well; but it is ruinous with our crops of twenty and thirty and more acres of corn. We cannot make the manure, and if we could we cannot command the labor that would be necessary to spread it. The offal of our crops, once taken off of the land, cannot be returned to it. Land thus managed must become poorer each year.

If the corn is cut before the wheat is sown, and hence the liability to rust is increased. If the wheat is sown amongst the standing corn, it may be sown soon enough, but there are many other difficulties. Unless the land was well ploughed in the spring it will not be in the proper state to nourish a crop of wheat; and, unless the corn was well and properly worked so as to keep down the weeds, it will not be possible to sow the wheat early nor to plough it regularly, hence the produce in quantity will be small and in quality irregular.

SAM'L JUDAH.

Vincennes, Aug. 24, 1846.

No less than ten thousand barrels of onions are raised annually in the city of Salem and the adjoining town of Danvers.

For the Southern Planter.

JERUSALEM ARTICHOKE.

Mr. Editor,—In your paper (the Southern Planter, Vol. III. No. 4, page 1,) is an article on the cultivation and value of the Jerusalem Artichoke, (Heleanthus Tuberosus.) If you have that paper I would like for you to publish it again in the Southern Planter, and state under the piece that I have a crop of them now growing and if any person wishes to give them a trial they can be supplied with seed any time between now and the next spring. They may be planted any time from now until the first of March. For the information of those who are not acquainted with them, and perhaps might suppose that they are the common round artichoke growing generally in this section of country, I would state that they are quite a different root, resembling the Spanish or sweet potato and the color of the yam potato. I have for several years wished to procure seed, but have been unable until last winter to do so. A gentleman living in Nash county, North Carolina, brought a small quantity from Tennessee a few years back, in his carriage; from them he raised a crop, whence I got mine. I have been told that they are much prized in Tennessee and Alabama for their great profit in raising and fattening hogs. If they be of so much value in those countries where corn is raised so plentifully and sells so low, of how much more value ought they to be in this country where corn is so much dearer. The artichoke is the easiest crop to cultivate of any that is made by ploughing and hoeing—and after they are made there is no risk in losing, for the place where they grow is the best to preserve them through the winter, and turning the hogs on them, saves the trouble of digging.

Very respectfully,

NATH'L MASON.

Summit Depot, Northampton, N. C.

In compliance with this request, we re-publish the following:

"From the fact, that many inquiries have been made of late in relation to this very remarkable and useful plant, I am disposed to speak a few things of its culture and uses.—The Jerusalem artichoke is a native of the warmer parts of America, and of course was unknown in Europe till after the discoveries in this country by Columbus and his coadjutors. Since that time it has been cultivated to considerable extent on the continent as well as in Great Britain, but the reports of its profits have considerably varied, in that, as well as this country. In the Old World some have cultivated it to afford shade to the game; others have converted the stocks and leaves into fodder for cattle, and others again, have encouraged its growth for the tubers alone. In this country there are two important objects to be kept in mind in raising artichokes; 1st. The improvement of land; 2dly. The use of the tubers.—However, the first matter is the cultivation, and I begin with

"1. *Soil.*—Almost any kind of land will produce artichokes, and it is remarkable, that they will grow in the shade, that is, under trees, or in fence corners very well indeed. Land, however, with a tolerably good sandy mould will give the most abundant crop. Low, wet soils, and very tenacious clay are not so suitable.

"2. *Preparation of Land.*—The ground should be broken as for corn, that is to say, one good, deep ploughing, and a thorough harrowing will answer the purpose admirably.

"3. *Laying Out.*—Rows laid off four feet each way with a bull's tongue or shovel plough, in most soils, will be the proper distance.

"4. *Quantity of Seed.*—From four to five bushels will be required to the acre, and unless the long roots are broken to pieces of three or four joints, or eyes each, this quantity will not be enough.

"5. *Manner of Planting.*—Drop one root at each cross of the plough and cover from one to two or three inches with a harrow, hoe, or plough.

"6. *Cultivation.*—So soon as the young plants appear, run round them, with a cultivator, harrow or light plough to destroy the young weeds, and loosen the earth. Keep the ground free of weeds and open to the influence of the atmosphere, till the plants are about three feet high, when they should be laid by, by the use of a cultivator; or in the absence of a cultivator, and when the land has been ploughed, the harrow should pass both ways to leave the ground loose and the surface level. Generally, about the same cultivation given to corn will answer well for artichokes.

"7. *Digging.*—This is the most troublesome job in the management of this crop; and if the hoe is the dependance, the labor will be very tedious. The better plan, is to lay off a land as for breaking up the ground, so soon as the frost has killed the under leaves of the stocks. The plough should run from six to nine inches deep and let the hands, big and little, pass directly after the plough, to pick up, that none of the roots may be covered by the next furrow.

"8. *Yield.*—The produce to the acre is variously estimated from five hundred to one thousand bushels, and it is probable the turn out on medium land would be nearer the latter than the former.

"9. *Uses.*—In England and other parts of Europe, the tubers have been considered quite a delicacy for man, and without doubt they make the most beautiful pickle. But their chief

importance, in this respect, is their use in feeding hogs. From the middle of October to the middle of November, the hogs may be turned on the artichokes, and with salt always in troughs to which they can have access, they will grow and thrive till next spring, particularly, if the ground is not too hard for rooting. I have not experimented to ascertain the quantity of hogs to the acre of good artichokes; but from the observation of two seasons, I am of the opinion twenty head will do well on an acre for months. As some have complained their hogs would not root after them, it may be necessary, as hogs, like men, know not much before learning, that they be taught to root after them. This is done, by calling the hogs after a plough that will throw out the roots, till the grunters learn their habitation, which will require but a very short time.

"10. *Improvement of Land.*—As the stocks grow from ten to fifteen feet in height, and have thick, porous foliage, much of the food of the plant is received from the atmosphere, and thereby the soil is not so heavily taxed as by other crops, the ground is protected from the killing rays of the sun and the stocks and leaves fall and rot very soon,—these advantages, with the manure from hogs, afford the cheapest, and amongst the richest coats in my knowledge.—It is my conviction, (in the absence of long experience) that artichokes in summer, and hogs in winter, will enrich our poor lands cheaper and much better than upon any other plan. To be sure, a farmer cannot have all his land in artichokes, but every one should have enough to support his hogs through the winter, and I venture those who give this crop a fair trial, will reluctantly abandon it.

"11. *General Remarks.*—A few farmers of my acquaintance have informed me, that they have succeeded with corn and artichokes together, and it is highly probable this will prove a successful mode of cultivating these two crops; but on the system of 'one thing at a time,' we would prefer each crop separately. Some have supposed the second year's growth on the same ground would be more valuable than the first; but this is a mistake. The plants grow so thick the second year, that not more than half a crop can be anticipated. It might answer, to plough out rows and cultivate the second year; but the practice of putting artichoke lands in something else the second year, is the plan I much prefer.

"Amongst the arguments which might be used in favor of this crop, it should not be forgotten, that there is no labor of digging, but for seed; that more troublesome weeds and grasses are completely smothered out; and last, but not least, the young plants the second year are more easily subdued than almost any weeds known. Take artichokes, all in all, I think them worthy the attention of every farmer who wishes to enrich his lands, or raise his pork with a small outlay of grain. T. F."

THE MOST RAPID GROWING MAPLE.

How many persons, undertaking to improve new and bare places, are at a loss for what trees to plant for immediate effect! "Something which will grow fast," is to them the great desideratum of life. To talk to such persons about steady and slow growing trees—beeches and oaks—is like talking to the manager of the electric telegraph about the advantages of the old fashioned mail coaches.

We must have the pleasure of recommending to such persons that excellent tree, the Silver Maple, *Acer eriocarpum.* It is, we believe, to be had in all the large nurseries; though indigenous here and there, it is seldom planted as an ornamental tree north of New Jersey. It is a large and handsome tree, with leaves as large as those of the Sugar Maple, but more delicately formed, and with a silvery or downy under surface.

But the *habit* of the tree is quite distinct from the other maples. When it has once formed a head, its branches begin to decline or droop slightly, with just enough of a sweep to be graceful, but not sufficient to amount to a *weeping* wood. In short, with its pleasing habit, clean foliage, and smooth bark, it is one of the most agreeable of trees.

As regards its rapidity of growth, it is quite remarkable. We do not know any fairer wooded tree, except the elm and the abele, which sooner throws a fine shade. As compared with the sugar maple, its growth is double. In five years it really makes a fine large head. And as a recommendation of still greater importance, we may add that it will thrive in almost any tolerable soil, from a light sand to a strong clay loam.—*Horticulturist.*

THE OSAGE ORANGE.

A gentleman lately left in our office a very fine specimen of the Osage orange, which was quite a curiosity to several of our visitors. A correspondent of the Ohio Cultivator, speaks of it as being superior to any thing else for hedging purposes, and we have heard others express the same opinion. Mr. Neff gives the following directions for its cultivation and management:

"The plants," he observes, "are best propagated from the seed, which I have always planted in the spring, (from not having been able to get them in the fall,) in a nursery, in broad drills, about a foot apart, the seed scattered

and separated an inch or two in the drills. My experience, however, plainly tells me that they should be planted in the fall, as when planted in the spring they vegetate but sparingly, and oftentimes many spring up the ensuing season, from the seed which had laid in the ground a year.

"The plants may also be favorably propagated from the trimmings of the roots when taken from the nursery to set in the hedge. They may be cut in small pieces, only two or three inches long, and planted in drills with the end barely covered by the soil. They will be sure to grow, unless they have been too much exposed, and suffered to become dry, which should be carefully avoided by covering with earth till ready to plant.

"At one year old, they may be transplanted to the hedge, or at two years they are stronger and better, and give more spare roots to propagate from. I have not found the fall planting to succeed well—the spring is far preferable.

"At a year old, whether they remain in the nursery or set in the hedge, they should be cut off within one or two inches of the ground; the next spring six inches; and about the first of July about fifteen inches; and if not in July, then the following spring, after which they will require but little more than side and extreme top pruning. Or the hedge may be thickened, and some of the above pruning avoided, and perfected sooner, and perhaps as desirably, both for utility and beauty, by careful intertwining of the lower branches; the numerous thorns will prevent any change of their places.

"In making the hedge, the ground should, of course, be well prepared the previous year, and in the early spring well ploughed and harrowed, till quite mellow. The line is then laid, and a trench formed with a spade deep and wide enough to admit the roots; plant in two rows, six inches apart, and twelve inches apart in each row, diagonally, so that the double row makes the plants equal to six inches apart in one line. The distance between the plants can be well preserved, by first preparing a stick cut in niches, at every six inches, and laid alongside the trench, which, being straight on the one side, will govern one row, and the eye will direct the other with sufficient accuracy. The plants having been taken up and properly pruned of the tops and roots, are scattered along the trench, and a man or boy, taking one in each hand, puts them in their places in the trench, while another stands with the shovel of well pulverized earth, which he carefully casts upon the roots, and thus they proceed on; afterwards fill in and press the earth to the roots with the hand or foot. When all are set, by means of a more elevated line, and a good eye, they may be pressed to a perfect straight line. Dress your ground, and all is done till the weeds and grass want eradicating. It is a general error in rearing trees, &c., to suppose the work done when planted. It is worse than labor lost, unless afterwards cultivated and protected beyond the reach of the stock, grass, and weeds; nay, it is downright waste."

For the Southern Planter.

SUBSOILING.

Mr. Editor,—Although I have frequently burdened the pages of the Planter with communications, yet I cannot cease before giving you the result of an experiment in subsoiling.

I find by reference to my day-book (for I keep a strict account of every transaction) that on the 11th of March, I commenced hauling my manure from the stable and hog pen (no farm pen manure touched, although a plenty of it,) to a twelve acre lot, that I intended for corn, putting seventy-seven heaps of the usual size per acre.*

Thursday, 12th, laid off two acres to be subsoiled. The hands scattered the manure regularly before the plough, the furrow plough running eight inches deep, the subsoil plough following running ten inches deep; consequently, the land was broke up eighteen inches deep—the manure was covered eight inches. The remaining ten acres were broken up eight inches deep—the manure covered eight inches, and precisely the same quantity was put to the acre.

March 23d, commenced laying off rows five feet by two.

March 24th, commenced planting, dropping six grains in the hill, and covering them with the hoe three inches.

Cultivation.

April 20th, run a single furrow each side as close and deep as possible with the *winged coulter*, throwing the earth from the corn. Cultivators followed, running twice in the row.

May 6th, ran a single furrow each side with the winged coulter, throwing the earth back to the corn, cultivators followed breaking up the intermediate space, running very deep, and four times in the row; hoes followed the cultivators, cleared out the remaining grass, and drew a little earth to the corn.

June 1st, run a single furrow in the middle of every row, to plant peas in; hoes came after the

* We are surprised that a writer of Mr. Blunt's general accuracy should use so loose an expression as "heaps of the *usual size*." Why not say heaps containing by estimate so many bushels. We will take this occasion to say that we receive no communications that we value more than those of Mr. Blunt: they are universally read, and that is the reason we are so anxious that he should set an example of exact and particular statements. In this case it is true the quantity of manure was unimportant, in the point of view in which Mr. Blunt presents it, but we desire to avoid, if possible, all loose expressions in agricultural communications.

plough; planted peas, and got out the grass from around the corn.

The corn was never touched from that day until the fodder was pulled. The peas were worked once with the hoe. I should have ploughed them, but it was impossible to get a plough in the row without injury to the corn.

Sunday, 14th of June, there was a tremendous fall of rain, accompanied with a good deal of wind, which blew down the corn very much, and ruined a great deal of the fodder. From the time the corn was first worked to the pulling of fodder, a vast difference could be seen between the sub and unsubsoiled corn. Some five or six gentlemen saw the corn, and marked the great difference. That portion subsoiled, stood the season well, always of a dark green, whilst the unsubsoiled fired badly. Among the gentlemen to see the corn, was the Rev. B. R. Duval. I requested him to point out the first and last row of the subsoiled corn. He did so immediately *to the very row*, and seemed surprised that there should be such a difference in favor of the subsoiled.

Now for the result:

The two acres subsoiled yielded 122 bushels of bread corn and 3 bushels of refuse—making 62½ bushels per acre.

The ten acres not subsoiled, yielded 275 bushels of bread corn and 12 bushels of refuse—making, per acre, 28 bushels and nearly 3 pecks.

The twelve acres of land were precisely alike, a light sandy loam, and clay subsoil. The peas have not as yet been cleaned out; but they will afford a fine yield, considering the work they had and the thickness of the corn. Five stacks of good blade fodder were obtained from the twelve acres.

Yours, T. E. Blunt.

Shingleton, Sussex, Nov. 5, 1846.

P. S.—I should like to know, through the Planter, the yield of Captain Pegram's fifteen acres. T. E. B.

From the South Carolina Temperance Advocate.

NUTRITIVE PROPERTIES OF PEAS AND BEANS.

Experience and observation induced us, long since, to form a very favorable opinion of the nourishing properties of peas and beans. The hardy lumbermen of Maine, in laying in a stock of provision for their winter support, while engaged in cutting down the forest, never fail to secure a large supply of these articles; and we have been repeatedly assured by men engaged in that laborious business, that their ability to labor was greater when their food consisted, in a large degree, of peas and beans, seasoned with fat pork, than when feeding on other substances.

Oats and peas are known in some parts of our country, as forming the very best food for hard working horses. And we have formed, also, a favorable opinion of peas and beans for fattening. We cannot, however, say that their value is not greater for laboring than for fattening animals—as chemical analysis seems to indicate—but we *know* that sheep have been fattened rapidly on beans and peas meal, and we have often seen hogs well fattened on meal of oats and peas ground together in the proportion of one part peas to two of oats by measure; which would make the proportion by weight about equal. We never heard any objection to the quality of pork so made.

But we think careful experiments are necessary to show the relative value of peas, and compared with other substances, (Indian corn, for example,) in feeding different animals for different purposes. If peas and beans are, as contended by some chemists, better than corn for the production of wool, let it be practically demonstrated; if corn is better for making mutton, let it be shown—let us have facts, and no theories but what are passed on them.

The value of peas and beans for human food is strongly set forth in the following extracts, which we take from an article by Dr. Buckland, published in an English psper. He remarks that the seed of leguminous plants, "especially peas and beans, are loaded with the constituents of muscle and bone ready prepared to form and maintain the muscular fibre of the body of animals." "Hence," he says, "the rapid restoration of the shrunk muscle of the exhausted post-horse by a good feed of oats and beans. Hence the sturdy growth of the Scotch children on oat cake and poridge, and of broth made of the meal of parched or kiln dried peas; on this a man can live, and do good work, for one and a half pence a day; while the children of the rich, who are pampered on the finest wheat flour, (without the pollord or bran,) and on sago, rice, butter and sugar, become fat and sleek, and would often die, as sometimes they do, from such non-nutritious food, but for the mixture of milk and eggs they eat in cakes and puddings.

"An old laborer at Atbridge complained to his master, Mr. Symons, (who died in 1844,) that laborers feeding now on potatoes could not do so good a day's work as when he was young, and when they fed on peas. 'Peas, sir,' said he, 'stick to the ribs.' He uttered the very truth of organic chemistry.

"In beans we have vegetable 'caseine,' or the peculiar element of cheese. What is more restorative or more grateful to man, when fatigued by labor or a long walk? As we heat or toast it melts, and ere it reaches our mouth, is drawn into strings of almost ready made fibre; and who has ever dined so fully as not to have room left for a little bit of cheese.

"What is so restorative as beans to the jaded

back or the exhausted race horse? Seboys on long voyages live exclusively on peas. The working and healthy man and beast want muscle, and not fat; fat encumbers and impedes activity, and every excess of it is disease. We seldom see a fat laborer or a fat soldier, except among the sergeants, who sometimes eat or drink too much.

"Charcoal, which, next to water, forms the chief ingredient in potatoes, is subsistency to life though not to strength. The same is true of the charcoal, which is the main ingredient of rice, sago, sugar, butter and fat. The woman at Tutbury, who pretended to fast for many days and weeks, sustained life by secretly sucking handkerchiefs charged with sugar or starch.—During the manufacturers' distress in Lancashire, five years ago, many of the poor remained in bed covered with blankets, where warmth and the absence of exercise lessened materially the need of food. When Sir John Franklin and his polar party travelled on snow nearly a fortnight without food, they felt no pain or hunger after the second day; they became lean and weak by drinking warm water and sleeping in blankets with their feet around a fire; alas, a knowledge of such facts may become needful and useful in the approaching winter.

"It has already been stated, that the most nutritious of all vegetable food is the flour of peas, which was the stable food in Europe before potatoes. The flour of kiln dried peas stirred in hot water makes a strong and pleasant Scotch brose, on which alone a man may do good work. Barrels of peas brose flour may be brought from Scotland, or prepared in England wherever there is a malt kiln.

"In England, pea-soup and peas pudding are still a common and most nourishing food. Our forefathers and their children, we know, from nursery rhymes, etc.

"Peas pudding hot, peas pudding cold,
Peas pudding in the pot, and nine days old."

For the Southern Planter.

CORN-SHELLERS AND CULTIVATORS.

A "Young Farmer," in the October number, among other things asks for a cheap corn-sheller and the best cultivator. Any thing that saves labor is at once deserving the attention of the agriculturist, who lives by labor the most incessant, but to save labor and money too, is of all things the most necessary for young farmers. I use a sheller, or beater, made of ten by ten inch pine, seven or eight feet long, and three feet broad, from out to out. The frame in the space between the sills have inserted into the head blocks, two inch oak rails, edge up one-quarter (full) of an inch apart. A two inch pin holds the corners together and forms legs. Four holes near the out edge of the sills receive pins or standards for two broad planks, and the sheller is complete. Two men with flails may beat out as much in a day as they have a mind to. The corn should pass through the coarse riddle of a fan, and then the small cobs are easily separated. Much labor in shelling is saved, but the *great* utility of the thing is the cobs are broken into short pieces which *can* be given to cattle which they devour greedily in this form. If given to them in *small quantities*, instead of the fashion of *some* who commit this rich food to the flames.

Like the "Young Farmer," I sought long and far for a cultivator that would work to suit me, but seeking in vain, I have invented one which if any young gentlemen, farmers or artists, choose to meet me in the spring (should we live) I will engage to beat the entire crowd ploughing corn of whatever State he or they may come, when it is considered the neatness of the work, the depth the land is stirred, the little left for the hoe. The same contrivance, by shifting one tooth, is one of the best of corn planters, (covering only,) by shifting two teeth it is converted into a coulter for working vegetables, irish potatoes, cabbage, beets and turnips, it is immutable; for putting in oats on a winter fallow, or wheat where the soils part easily and the vegetable matter is rotten, nothing can be superior, as it stirs the land without bringing back to the surface *that* which should remain below, while the wear for a corn crop is only ten cents, and *never* has to go to the blacksmith-shop, when once well finished. I shall offer the implements for sale in the spring at about five to six dollars, according to the weight of iron required.

When the land is in good order for corn and laid off two ways there is no more use for a hoe than there is for a fork to drink soup with.—When it is used at the proper period, and the corn in drills, a hand can hoe nearly double the amount of hills in a day that can be done when the corn is sided with the bar to the plough.

J. H. D. Lowndes.

P. S.—It is lucky you put my name to the last piece published over it, as I should not have known it without. J. H. D. L.

For the Southern Planter.

STIFLED HORSES.

Seeing many prescriptions for the cure of stifled horses in different authors, and among others, one in the May number of the Southern Planter, by J. B. Godard, of Connecticut, page 106, permit me to give Mr. Godard and the public, my own experience of this disease, through your interesting and useful paper. In the first place, the stifle in a horse is simply this: the flank or stifle joint is a large one, with two deep

grooves in the head, both of the quarter and thigh bone, fitting in each other, and when bent short forward, these grooves and ridges would be exposed to injury, was it not for a cartilage similar to our knee-pan, operating as a defender of the joint. This cartilage is confined by tendons to the muscle above and below, and when the horse is standing at his ease, may be felt to play loosely with the hand, but when this cartilage gets stifled over the head of the joint, either on the in or out side, by accident, it creates so much pain to force it back, the horse will not permit it, if he can possibly avoid it, and, therefore, is disposed to keep the stifled limb in a contracted position. The remedy is simply to pull the limb straight back till the stifle joint assumes a right line with the two bones joining the same, and the cartilage at once assumes its proper place. About thirty years past I dissected a stifle joint of a mare which I had killed, from becoming useless from this cause. She had been stifled twelve months or more. I found the cartilage had adhered closely to the adjoining parts, and from creating friction on an improper part of the bone on the outside of the joint, the bone itself had become diseased, from which reason a stifle of long standing would be incurable. I have put several stifle bones in place since my discovery, as above; indeed, all that I have tried, by simply tying a rope around the pastern joint of the stifled limb, roping the other end, one around a stake or post, holding it in my hand so as to let it loose when the horse has been made to pull forward sufficiently to straighten the limb by a careful hand hold of the bridle, which should be done suddenly, as the horse will avoid it if apprised by a gradual move. If this step be taken immediately after the accident happening, the horse or owner will suffer but little inconvenience from it.

RYLAND RODES.

Nelson County, Oct. 18, 1846.

N. B.—Mr. Botts, when I asked you, in September last, to put the above information in the Planter, you preferred my writing it out myself and subscribing my name to it for publication, which I declined, but remarked, that I would subscribe some fictitious name; but I since concluded as anonymous pieces are not so popular with myself, and no doubt with others, to so simple a statement of facts so well known to myself to be true, I would give you my name and residence. R. R.

For the Southern Planter.

PLOUGHS.

Mr. Editor,—In the September and October numbers of the Planter there are communications from a writer styling himself "The Farmer's Friend," the design of which is to show that the patent laws ought to regulate the prices of the patented articles. To *your* pen, Mr. Editor, we leave the question in dispute between yourself and your correspondent. *Our* purpose is to prevent or correct an impression which those articles are calculated to produce upon the minds of the uninformed. That writer endeavors to illustrate and enforce his views by a reference to the plough and the wheat machine. Though, in his remarks on the extravagant prices of patented ploughs, he *instances* only the "Boston Centre Draught Plough," yet he evidently intends his remarks for patented ploughs generally. "If these ploughs," says he, "were not patented they could be had for at least eight dollars, or one-half of the present price." Would "The Farmer's Friend" believe us, if we say, that we are manufacturing in Richmond, a patented plough, the invention of a Virginian, differing in the principles of its construction from every other plough in the Union as widely as the "Boston Centre Draught" differs from the common plough, varying in sizes from a light one horse to a large three or four horse plough, with either wrought or cast shares, of which we have sold four hundred since January last, and yet we have never sold a plough for "sixteen," nor even for "fourteen" dollars. In our advertisement, published for months in the Enquirer and Whig, we say, "We expect to sell our ploughs as low as ordinary ploughs are sold in the city market." As it is difficult to compare sizes and prices with judgment without actual inspection, we respectfully invite "The Farmer's Friend" to visit our factory and we will convince him of his error, at least in regard to *our* patented plough. We can give the names of numerous intelligent, practical and successful farmers, who regard WATT'S CUFF BRACE AND GAUGE or Centre Draught" Plough, the cheapest plough they ever used. Its advantages, such as simplicity, strength, durability, ease and accuracy of adjustment to the horse, the landing and draughting, greater freedom from choking, &c., are all afforded to the farmer *without additional cost.*

We think, Mr. Editor, it would have been but an act of justice in you, while comparing Richmond ploughs with the "Boston Centre Draught Plough," to have dropped at least a word in regard to Watt's Plough, so as to disabuse the mind of "The Farmer's Friend" of his great error, as manifested in his sweeping declaration in regard to the exorbitant prices of patented ploughs. By-the-by, Mr. Editor, in an article from your pen, in the June number, 1842, (Vol. 2, p. 143,) on the whole, quite complimentary to our plough, you express yourself as "almost afraid that these qualities are gained at the expense of permanency and simplicity."—You also said in regard to another advantage claimed, that "Upon this point we will seek

more definite and precise information, which, when obtained, shall be laid before our readers." As four years have elapsed and many of your personal acquantances have tried it, will you let the world know what is its reputation at present. In the meantime allow us to subjoin the *voluntary* certificate of a competent judge.

Respectfully,

GEORGE WATT & Co.

Richmond, Nov. 5, 1846.

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CERTIFICATE.

This is to certify, that I have for several months been working one of Watt's Cuff Brace and Gauge Ploughs, and, after a fair trial, I consider it the best plough I ever used. Though it is a large two horse plough, cutting a wide, deep and uniform furrow, it is of remarkably easy draught, and runs so steady and level that it may be guided the whole length of the land with the *thumb and finger*. The great excellency of this plough over all others I have seen is, that, by means of the cuff, the beam may be raised or lowered, and turned to the right or left, to increase or diminish the draughting and landing at pleasure. This arrangement is not only simple and effective, but gives additional strength and permanency to the plough. If all his ploughs perform like mine, (and they are all constructed on the same principle,) they cannot fail to please purchasers.

CURTIS CARTER, SR.

May 15, 1846.

Messrs. Watt & Co. seem to intimate that we have done them some injustice in not having made mention of their plough to "The Farmer's Friend." We did not know then, nor do we know now, the price at which they sell their ploughs. "The Farmer's Friend" asked nothing about their plough, and spoke only of those two which were referred to in our answer. We do not know why we should have been expected to mention this particular plough, rather than any of the various kinds that are manufactured in Virginia.

In 1842, this plough was exhibited to us, and our opinion with a description of it, may be found in the June number of the Planter for that year. We were not altogether satisfied with the arrangement, and in consequence, we believe, of the absence of Mr. Watt, who talks more sensibly upon the subject of ploughs than any manufacturer we know, the thing lay dormant for two or three years. Mr. Watt returned and brought this plough into the market, and we have heard several of our friends speak very highly of it. The certificate annexed to his communication is from a very experienced and intelligent farmer. Thinking it possible that we might have done Mr. Watt's invention some injustice in our former notice of it, we called on him last summer, to say, that we would cheerfully publish any certificate or any statement he might desire to print. And now, we would greatly prefer that others who have used it, should express their opinion of the merits of this implement, than that we should say any thing upon the subject. We believe, however, that the plough is less liable to *choke* than any we ever saw.

For the Southern Planter.

THRESHING MACHINES.

Mr. Editor,—I did not expect to have to address another communication to the friends of the Planter so soon, but on reading over your remarks about inserting the teeth in the drum, I beg leave to warn the farmer who may desire to have a drum made not to bore a hole for the teeth, (but force them in with a heavy hammer or hatchet; the teeth should be put in weak salt and water the night before they are used and laid on a dry plank, they will rust by the following morning, and then be ready for use,) I have known this tried, and they came out and injury very nearly resulted.

The spindle ought to be driven through the block after a hole has been bored, and then the cylinder turned, and the machine will always run true and level. The block should be put on the spindle while green and it will shrink to the spindle, then seasoned and covered with the sheet iron. There is no use of any band around this or the bed.

I stated, Mr. Editor, in my last I was no mechanic; I mean I never followed it as a profession. I have been piddling ever since I could shove a jack plane, and am at this time able to make a window sash. That is the reason I have been urging on farmers the propriety of stocking their ploughs and all other such jobs, when they are not able to afford the expense of having it done.

And, lastly, with regard to having my feelings injured by your comments. I have to say, that you, as Editor, have the right to express your opinion on any article, and I do not consider you to have transcended your privilege—my remarks, I hope, you will construe in the same way.

Have any of your readers tried burned clay as a manure? I have seen it spoken of in the American Farmer, 1835. Some who tried it preferred it to lime. It must have contained lime.

What could lime be delivered in Petersburg

at for farming purposes, say one hundred tierces? Or what could oyster shells be furnished for at the same place? I wish to try lime on my land, and if I can get it to do half it is said to do, I shall go extensively into its use as a manure. I have tried gypsum on clover for two successive years and have seen no effect, and in five miles of my plantation its effects can be traced to a row. What is the test for ascertaining the purity of gypsum?

THE FARMER'S FRIEND.

October, 1846.

P. S.—I may have infringed on some one's patent; if so, I desire to be speedily apprised of it, there are so many patents now out. There is no finding out scarcely whether you are secure in making any machine. I would say here that I also have a machine of my own contrivance, to plant peas. It opens the row, drops the peas and covers them up, drawn by a horse.

For the Southern Planter.

VALUABLE RECIPE.

Mr. Editor,—Having derived considerable benefit from several recipes taken from the columns of the Planter, I think it incumbent upon me to give in any that should come within my poor knowledge. I know of only one, which is a remedy for the toe nails growing into the flesh of the toe: the remedy and the writer both may appear very simple, but, sir, let those who condemn it, try it, as it will relieve them from the pain of operation, which is very great. It is simply to take a piece of glass and scrape the middle of the nail until you almost reach the flesh; that is, as thin as possible; then apply raw cotton to the place affected until the nail thickens up, and then you will have a well toe.

Your humble well wisher,

L. C. HALES.

Nov. 2, 1846.

DRAINING.

We mentioned in our last that we had received the seventh number of Colman's Agricultural Tour, and promised a further notice of it. The subjects with which it is occupied are Draining, Irrigation, Rotation of Crops, Soiling and the Cultivation of Crops. So practical and so valuable are the contents of this number, that we shall extract largely from it: we wish we had room for the whole of it. First on the subject of

DRAINING.

Mr. Colman is speaking of the valuable changes effected by relieving land of superfluous water. This is to be effected by a judicious system of draining and subsoiling. He says:

"The effects of stagnant water in land are destructive to vegetation; or rather, under certain conditions, it may even produce a greater luxuriance of vegetation, but the plants produced in a very wet soil are unpalatable, innutritious, and insubstantial. Animals fed upon them always lose condition, and the manure of animals so fed is almost worthless. I saw this strikingly illustrated in the magnificent park of the Duke of Bedford, at Woburn Abbey. Here there were many spots where the grass was luxuriant and abundant, on account of their excessive dampness, and which were entirely neglected both by the sheep and the deer; but where ever these places, once wet, had been thoroughly drained, they became the favorite resorts of the animals, and were fed as closely as possible. I have witnessed similar results in many other cases.

"Water is an element in the food of plants, composing, in some instances, as in the turnip and potato, a large proportion of their substance; the former, it is stated, containing nearly ninety per cent., the latter varying from seventy to eighty per cent. Water, filtering through a soil, opens its pores to the admission of air, which is most essential to the growth of the plant, or perhaps, more properly speaking, to the fertility of the soil. Humboldt observed that argillaceous soils and humus deprived the air of its oxygen. He satisfactorily ascertained that earth taken from the galleries of mines at Salzburg only became fertile after having been exposed to the atmosphere for a considerable length of time. These observations established the necessity of the presence of oxygen in the interstices of the soil, or, as he then said, and as may still be maintained, the utility of a previous oxidation of the soil. All our agricultural facts, indeed, confirm this view of the necessity of air in the interstices of the soil that is destined for the growth of vegetables. When, by ploughing very deeply, for example, we bring up a portion of the subsoil into the arable layer, in order to increase its thickness, we always lessen the fertility of the ground for a time: in spite of the action of manures, and of any treatment we may adopt, a certain time must elapse before the subsoil can produce an advantageous effect; it is absolutely necessary that it have been exposed to the atmospheric influences; and it is then only that deep ploughing, which gives the arable layer a greater thickness, pays completely for the expense it has occasioned.*

"Water contributes, in the next place, when filtering gradually through the soil, to dissolve the manures, and prepare them to assist in the

* Boussingault, p. 286.

growth of the plants—in some cases, for the elements of these manures to be taken up by the plants. But water in too great abundance destroys these manures, and carries them away. Rainwater, falling upon the surface, when the temperature of the air is higher than that of the soil, contributes to increase this temperature of the soil. Water, when stagnant in a soil, diminishes its temperature. The extreme wetness of a soil renders it difficult to be worked; impedes the sowing or planting; often destroys the seed and the crop; occasions it to become poached or inaccessible to animals; and in many other ways may be said to make the cultivation of such soils hopeless.

"The rainwater which falls upon land may be detained by two circumstances—the first by the impervious nature of the upper soil, which may be an adhesive and strong clay, through which the rain cannot percolate; the second, by an impervious or indurated subsoil, either of clay or of hard pan, which holds fast the water when it reaches it, and consequently the upper portions become saturated or flooded. In respect to the former, the adhesive clay, though there have been some failures, yet there are many remarkable instances, where, by a system of under draining and subsoil ploughing, the hardest soils have been opened and rendered comparatively dry and friable. When a ditch or drain has been dug, the tenacity of the neighboring soil has been loosened, and the drying of the soil in the hot sun of summer has, under such circumstances, caused it to crack in various directions, and, these fissures being once opened, channels for the trickling of water have been formed; others have followed from contiguity, and these adhesive soils, by a course of cultivation, have been loosened and reduced to a condition of unlooked-for dryness and fineness.—Where the wetness of the soil has been occasioned by a hard and impervious subsoil, this evil has found no other effectual remedy than in deep draining, and the thorough breaking up of this hard layer by the subsoil plough. The stratum below is often found pervious to the water, which makes for itself a ready exit, when it once reaches it. Some persons are of opinion that, if it were possible to prevent it, it would not be desirable to draw off the water beyond a depth of from four to five feet,—vegetation ordinarily not extending beyond this,—thinking that, in time of drought, the upper surface might be benefited by the evaporation of the water at this depth, or its ascent by the process of capillary attraction. It is useless to speculate in this case, as such a matter must be almost wholly beyond our arrangement or control. I ought to add that, where this adhesive soil is once loosened, its porosity—if I may borrow a hard word—is often much assisted by the common earth worms, who penetrate it in various directions, and, directed by natural instinct, aim especially at the drains or places where the water is found. Thus it is that we are often served by our most humble friends, and in circumstances where we never think of recognising the obligation."

With respect to the character of the soils that are to be improved by subsoiling and draining, he remarks:

"The removal of water from the land is, then, in all cases, indispensable to a successful cultivation. Where it proceeds from permanent springs, they must either be cut off or led away by a drain which shall directly reach them.—There are very few lands which would not be benefited by draining. Wherever a spot is discovered in a field, where the water is accustomed to lodge, or which, from the coarseness or character of the herbage growing upon it, indicates the presence of water, we may feel sure that there the operations of draining are required. In the next place, it is desirable that the wetness arising from rain should be removed as soon as practicable. All the advantage which plants derive from rain are obtained from its immediate passage through the soil. Whenever its passage is arrested, and the water becomes stagnant, its presence is injurious, excepting to plants which are, like rice, for example, of an aquatic, or, as it may be termed, an amphibious character.

"That soils of a light and sandy character are benefited by draining, I have had the fullest demonstration, and shall presently show. That soils of a most retentive and adhesive character have been greatly improved by it, seems to be established in many cases, though there are instances of failure in this respect; and an intelligent and spirited agriculturist in Yorkshire, with whom I have the pleasure of an acquaintance, has proposed that analytical experiments should be made, to determine what proportion of aluminous matter in a soil should discourage any attempts at improvement, by draining and subsoiling. Perfect success has followed the operation where the amount of clay or alumine has been as great as twenty-four per cent.; and failures have occurred, where the proportion has been forty-three per cent., which induces the conclusion with him, that the boundary must lie somewhere between these two points. This, he thinks, experiment alone can decide. It must not be overlooked, however, that other circumstances besides the actual composition of the soil, may have effected the results. Mr. Hammond, before quoted, has been successful in draining heavy and adhesive soils, where, after the drains have been opened, and the pipes laid and but slightly covered, the frost has had an opportunity of operating upon the land, and occasioned fissures, which have been converted

into permanent pores or channels for the water falling upon such land to reach the drains.—There is always some encouragement in the simple fact, that one drop of water is sure, in its natural course, to follow another. There are, however, undoubtedly, some soils, where, from their impervious character, draining would be almost hopeless. It is difficult to pronounce beforehand what soils come under this description. It is certain that many soils, which were considered beyond the reach of this species of improvement, have been subjected to it with great and permanent advantage. In many cases, the character of the soil, whether suitable or unsuitable for drainage, might be easily ascertained by sinking a hole of the depth to which it is proposed to drain, and, securing it from the access of rain, or of water running upon the surface, ascertain whether any water would filter into it."

Mr. Colman then goes on to tell us how this important and expensive business is effected in England. Why might not the same means be resorted to in this country? We believe if well employed, it would prove very profitable both to the undertakers and the cultivators. He says:

"The drainage of land upon the most improved principles and method, may be considered in England as a branch of engineering, to the successful application of which both science and much practice and experience are requisite.—For an individual to undertake it upon any extensive scale, without sufficient knowledge and skill, would be likely to terminate in disappointment and loss. It would seem as though no better plan could be adopted than that which has been recently undertaken, viz: the organization, with an ample capital, of a draining association. This company, under the name of the West of England and South Wales Land Draining Company, propose to establish, in different and convenient parts of the country, where the clay is abundant and suitable, tileries for the manufacture of pipe tiles; they mean to secure to themselves always the services of accomplished and practical engineers, and, having proper tools and experienced workmen, they will undertake the effectual drainage of whole farms, guaranteeing that the work shall be executed in a correct and perfect manner; and in this way at a great saving of trouble, and at a great deal less expense than it could be effected by individual effort and enterprise. It is difficult to conceive of an arrangement from which, if skilfully and liberally managed, more advantages may result. An extensive and thorough system of drainage will, beyond all question, effect for England the greatest and best improvement, in an agricultural view, which can possibly be looked for. 'The effect produced on the crops of close, retentive soils, after they have been perfectly drained and subsoil ploughed,' says Mr. Morton, 'is most astonishing. The produce is so much increased, that it will, in many instances, pay the expenses in a year or two; and wet soils, which seemed to be strong clay when wet, become friable, and even light, when completely subsoil drained, are easily cultivated, and light enough for producing turnips to be fed off with sheep. Complete or perfect drainage is the foundation of all improvements in husbandry; it should, therefore, be the first step which we take in attempting to improve or ameliorate the soil.'

"In looking at a field or piece of land, which is proposod to be drained, the first thing to be ascertained is, what fall can be had for removing the water. A fall of one in two hundred is stated, by practical men, to be the extreme on one side; but it is desirable to get, if possible, one in a hundred. With such an inclination, the drains are more likely to be kept free from sediment. The next step to be taken is, to lay out and form a main ditch or drain, into which all the small drains shall empty themselves, and the water be carried off. This, of course, must be in the lower part of the land, and it is generally advised to let it remain open, that the mouths of the small drains may be observed and watched. Where left open, as at the model farm of Lord Ducie, there the inclination of the sides is so easy that they are cultivated to the water's edge. It is advised, in other cases, to let the side drains empty into a common main drain, which is to be covered; and this main drain is to empty itself into an open ditch. The principal reason assigned for having all the underground parallel drains empty themselves into the main, and through that into the ditch, instead of each emptying itself into the ditch, is, that while, in the latter case, a hundred mouths would require to be kept open and clear of rubbish, in the former only one has to be attended to; and also that, during the summer months, some of the parallel drains would become dry, and allow the entrance of moles and rats, which would soon stop them up; but that the quantity of water which always issues from a main drain would forbid their entrance, and thus hinder them from injuring it or the others.* Where the bottom of the drain, however, is formed with broken stones, there is no danger from this circumstance; and where the pipe drains of only one inch bore are used, they do not admit of the entrance of vermin. On Mr. Smith's plan, however, the main drains are covered as well as the side drains, and the entrance or outlet of the main drain may be protected by an iron grating, or a foot or two of broken stone laid down at

* Morton.

the end. It is advised that the main drain should be sunk six inches lower than the side drains; but where pipes are used, the side drains may enter directly into the main drains, the pipes being made with a hole in the side, for this express purpose. It has been found quite effectual, in some cases, to lay two pipes for a main drain, side by side; but it would seem most desirable to have a pipe of a large bore for the main drain, and of a sufficient size to receive all the water which should be emptied into it from the side drains. Such pipes, at Mr. Stirling's, near Falkirk, were of a very large bore, and made in three parts, so as exactly to fit each other when brought together. The advantage of a concave or circular bottom for the water to flow in, in preference to a flat sole, must be obvious at first thought. Tiles have been constructed with a circular bottom, like a horse-shoe set upon its front edge, and a flat cover to rest upon it; but I can see no advantage which this has over a pipe; unless it might be that, by the removal of the cover, the seat of any obstruction might be ascertained without lifting the whole.

"It is often found necessary to make what are called *submain drains*, which of course communicate with the main drain. This must depend upon the nature of the ground, and where these submains are made on the side of a hill, they are best made obliquely, crossing the small drains diagonally, and thus giving an impulse to the water received into them. It is advised, in all cases, to make the parallel drains, which connect with the main or the submain, straight, whether running on level land, or on a side hill; and it is deemed best that no small or parallel drain should ever exceed two hundred yards in length, without emptying into a main or a sub main drain. The distance at which the drains should be placed apart may vary with the nature of the soil, from a rod to forty or sixty feet. It may be interesting to know the length of drainage, or of pipe, which may be required in an acre, at the different distances which are customarily adopted. I subjoin, therefore, the following table:

Distance between Drains.	Length of Drains in Furlongs.	Feet of Pipes.
66	1	660
44	1½	990
33	2	1320
22	3	1980
16½	4	2640

"'On the heavy lands of Suffolk, and the adjoining counties,' says one farmer, 'under draining at a distance of 16½ feet, and at a depth of 26 or 30 inches, is as much a matter of routine as hedging and ditching.' This depth would now be deemed quite insufficient.

"The mode of covering drains is various. Where the drains are filled with broken stones, it is advised to lay upon the top of the stones an inverted sod, and then return the dirt which has been taken out. Where a pipe or tile and sole are used, the same advice may be given. In adhesive or clayey soils, it is deemed quite objectionable to return the clay, and ram it in closely upon the pipe. It has been deemed important, by some persons, that alternate pipes of a large and small bore should be used, so that the small pipes may enter the larger ones, and that there should be no interruption of continuity between them. In some cases, rings of clay have been formed, into which the ends of the two pipes might enter, so as to close the interstice, and retain the pipes upon a level This is not, however, deemed necessary. Where the bottom is hard, and the pipes carefully placed, there is no danger, afterwards, of their getting, if the term may be allowed, misfitted; in cases where the bottom is sandy or loose, more pains must be taken to prevent this, which is easily done by an experienced and careful drainer."

The following is described as the result of subsoiling and draining upon an estate in Ireland:

"In the whole of the land drained, there is not one open channel for water; all the water passes away under ground, and the wheat seed on the potato land has this year been covered with the grubber, without any ploughing, after the removal of the potatoes, leaving the land perfectly flat, and without a furrow, as recommended by Mr. Smith, so that every stalk of grain will benefit equally from both the soil and the atmosphere; and during the late rains, even on sloping ground, not a particle of the fine soil has been washed from the land, while, in the undrained lands around, the roads and ditches are filled with the fine deposits from the streams of water which have rolled down the furrows, and the rivers are red with the still finer matter which they are hurrying to the bottom of the sea. This advantage is attained without any attendant evil; they look to the total abolition of every water-furrow from the fields.'"

The following is a description of the manner in which the drains at Ballyleidy have been executed:

"The submains are laid off on a considerable declivity, and cut six inches deeper than the parallel drains, with a slate and a large tile laid in the bottom of each, with stones carefully coupled over the tiles, and six inches of broken stones placed over all, then neatly turfed. Iron grates are built in at the mouths, where these submains discharge, so as effectually to prevent the entrance of any kind of vermin. I am now satisfied that the most permanent submains are two tiles reversed, forming a pipe, and thus con-

fining the water so as to give it force and pressure, to clear away all obstructions.

" 'The parallel drains were neatly cut, and, where stones were used, filled thirteen inches deep, the stones regularly levelled, which were all screened, and broken, to pass through a three-inch ring; then covered with a thin sod, which was well tramped down.

" 'When the tiles and stones were both used, about twenty-five tons of well broken stones were put over the tiles to the acre, and the drains well sodded.

" 'It was also found necessary to build a large main drain for conveying the water from about four hundred acres, through a large tract of ground, which added considerably to the expense.

" 'In May, 1844, preparation for turnips was commenced upon it, and all parties previously acquainted with it were astonished at the change. It had become deep, free, and open, one ploughing and harrowing being quite sufficient to prepare it for drilling. Fifty barrels of lime to the acre was applied, after the first stroke of the harrow, and then well harrowed in with a heavy iron harrow, mixing it minutely with the soil, to the depth of five or six inches. It was then drilled and sown with Swedish turnips on the 6th and 7th of June—part being manured with four cwt. of guano to the acre, and part with two cwt. of guano and twelve bushels of crushed bones: the result has been a superior crop—the medal given by the Royal Agricultural Society to local societies, for the best cultivated five acres of turnips, having been awarded by the Bangor Farming Society for this crop. I have every reason to believe that all kinds of crops usually grown in this neighborhood may in future be grown on it successfully; that they may be sown or planted at times, *particularly after heavy rains*, which would have been impossible before draining, and that in all cases, with the same manure and labor, there will be fully one-third of an increase in the crop.'

"This gentleman proceeds with some observations, which are quite worth recording:

" 'It may be proper to remark why it is that I recommend drains to be made deeper and farther apart than those which have been executed at Ballyleidy; and why I prefer tiles, while a large portion of the drains at Ballyleidy have been made with stones.

" 'In the first case, it is from the experience obtained by a careful examination of the effects produced by drains of different depths, that I have become convinced of the superiority of deep over shallow drains. With respect to stones, it was a matter of necessity using them here, as I have been long satisfied that tiles or pipes are preferable. It was only the difficulty of obtaining tiles in time at a reasonable price, which prevented them being used in all cases. I may also observe, that I have in many instances put stones over tiles, but now believe that even in the stiffest clay this is unnecessary, the drains which have been made with tiles alone being equally efficacious. The tiles, where stones are not put over them, are less liable to be injured or broken, and of course calculated to be more *permanent*—an object which, in such an important improvement, should never be lost sight of.' "

MANAGEMENT OF POULTRY.

BY SARAH DAKIN.

Hens.—1st. Provide a warm, dry shelter for winter.

2d. Feed with oats, soaked for twelve hours in warm water before feeding.

3d. Burn clam shells and pound them fine, let them have as many as they can eat, and you may have eggs from January to December.

From thirty hens I have gathered this year 3,522 eggs by the 10th of September, and raised 200 chickens.

I manage my chickens by feeding oats and rye ground, two bushels of oats to one of rye. Keep them in a warm shelter at night.

N. B.—To prevent the pip or gapes change the male every year, and your chickens will be healthy.

Management of Turkeys.—1st. Feed the same as hens, and let them hatch their young ones any time after the 20th of May.

2d. Feed the young ones on oats and rye ground, wet with milk curd, and occasionally sprinkle a little powdered clam shell lime with the feed; if cold and wet weather, sprinkle a little black pepper with their food.

3d. Make warm and dry shelters for them to brood in nights, and keep them from the wet and dew until the sun shines warm.

4th. Feed but little the first twenty-four hours after they are hatched; by this management I can raise nine out of ten.

Be sure and change the tom turkey every year.

Raising Goslings.—1st. Have them hatch as early as the first of May, if possible. Make dry, warm places for their nests.

2d. Feed the young goslings with corn meal, wet the feed with milk.

3d. Let them have access to water in pleasant weather.

4th. Keep them at night in a warm, dry shelter.

By this management I can raise forty-nine out of fifty.

Ducks.—Feed ducks the same as goslings. In this way I have raised fifty-two young ones from two old ducks in one year.—*Poughkeepsie Telegraph.*

From the Western Farmer and Gardener.

PRACTICAL USE OF LEAVES.

There are two facts in the functions of the leaf, which are worth consideration on account of their practical bearings. The food of plants is, for the most part, taken in solution, through its roots. Various minerals—silex, lime, alumen, magnesia, potassa—are passed into the tree in a dissolved state. The sap passes to the leaf, the superfluous water is given off, *but not the substances which it held in solution.* These, in part, are distributed through the plant, and, in part, remain as a *deposit in the cells of the leaf.* Gradually the leaf chokes up, its functions are impeded, and finally entirely stopped. When the leaf drops it contains a large per cent. of mineral matter. An autumnal or old leaf yields, upon analysis, a very much larger proportion of earthy matter than a vernal leaf, which, being yet young, has not received within its cells any considerable deposit. It will be found also, that the leaves contain a very much higer per cent. of mineral matter, than *the wood of the trunk.* The dried leaves of the elm contain more than eleven per cent. of ashes, (earthy matter,) while the wood contains less than two per cent.; those of the willow, more than eight per cent., while the wood has only 0.45; those of the beech 6.69, the wood only 0.36; those of the (European) oak 4.05, the wood only 0.21; those of the pitch-pine 3.15, the wood only 0.25 per cent.

It is very plain from these facts, that, in forests, the mineral ingredients of the soil perform a sort of *circulation;* entering the root, they are deposited in the leaf; then, with it, fall to the earth, and by its decay, they are restored to the soil, again to travel their circuit. Forest soils, therefore, instead of being impoverished by the growth of trees, received back annually the greatest proportion of those mineral elements necessary to the tree, and besides, much organized matter received into the plant from the atmosphere; soils therefore are gaining instead of losing. If owners of parks or groves, for neatness sake, or to obtain leaves for other purposes, gathers the annual harvest of leaves, he will, in time, take away great quantities of mineral matter, by which the soil, ultimately, will be impoverished, unless it is restored by manures.

Leaf-manure has always been held in high esteem by gardeners. But many regard it as a purely *vegetable substance;* whereas, it is the best mineral manure that can be applied to the soil. What are called vegetable loams, (not peat soils, made up principally, of decomposed *roots,*) contain large quantities of earthy matter, being mineral-vegetable, rather than vegetable soils.

Every gardener should know, that the best manure for any plant is the decomposed leaves and substance of its own species. This fact will suggest the proper course with reference to the leaves, tops, vines, haulm, and other vegetable refuse of the garden.

The other fact connected with the leaf, is its function of *exhalation.* The greatest proportion of crude sap which ascends the trunk, upon reaching the leaf, is given forth again to the atmosphere, by means of a particularly beautiful economy. The *quantity* of moisture produced by a plant is hardly dreamed of by those who have not specially informed themselves. The experiments of Hales have been often quoted. A sun-flower, three and a half feet high, presenting a surface of 5.616 square inches exposed to the sun, was found to perspire at the rate of twenty to thirty ounces avoirdupois, every twelve hours, or seventeen times more than a man. A vine with twelve square feet exhaled at the rate of five or six ounces a day. A seedling apple tree, with twelve square feet of foliage, lost nine ounces a day.

These are experiments upon very small plants. The vast amount of surface presented by a large tree must give off immense quantities of moisture. The practical bearings of this fact of vegetable exhalation are not a few. Wet forest lands, by being cleared of timber, become dry; and streams, fed from such sources, become almost extinct as civilzation encroaches on wild woods. The excessive dampness of crowded gardens is not singular, and still less is it strange that dwellings covered with vines, whose windows are choked with shrubs, and whose roof is overhung with branches of trees, should be intolerably damp; and when the good housewife is scrubbing, scouring and brushing, and nevertheless, marvelling that her house is so infested with mould, she hardly suspects that her troubles would be more easily removed by the axe or saw, than by all her cloths and brushes. A house should never be closely surrounded with shrubs. A free circulation of air should be maintained all about it, and shade trees so disposed as to leave large openings for the light and sun to enter. The usual rains of the current season have produced so great a dampness in our residences that no one can fail to have noticed its effect, both on the health of the occupants, and upon the beauty and good condition of their household substance.

STEVEN'S PATENT POST AND FENCE.

This will doubtless be deemed by farmers and others, a valuable invention. The posts are made of burnt clay, moulded and burnt in the same way as hard bricks. A post of five feet long, four inches square at the bottom, and three at the top, can be afforded at the brick yards for twelve and a half cents. With ordinary usage, they are nearly as durable as stone, and, in the

long run, cheaper than wood. The posts are set in the ground diagonally or cornerwise. A tenon is made on the top of each post, on which is placed a coupling block to which the top rail is secured by pins or nails. The fence is thus secure and firm, not liable to rot. The inventor is Captain Joseph Stevens, of Northumberland, Saratoga county, New York. Specimens may be seen and rights purchased, at the Mechanics' and Farmers' Agency, 34 Ann street.—*Scientific American.*

TO ASCERTAIN THE SPEED OR VELOCITY OF MACHINERY.

In all ordinary machinery, the motion of some part thereof is sufficiently moderate to admit of the counting of the revolutions or vibrations thereof. Having compared the motion with time, and ascertained the number of revolutions per minute, of a driving wheel or drum, multiply that number by the quotient obtained by dividing the diameter of this wheel by the policy or pinion which receives a motion directly therefrom. But if these two diameters are such that one cannot be divided by the other without a remainder, then reduce each to inches and decimals, and apply the rule of proportion, multiply the diameter of the first wheel by the number of its revolutions per minute, and divide the product by the diameter of the small wheel, pulley, or pinion, and the quotient will show the velocity thereof, in revolutions per minute. If another drum or gear wheel is mounted on the shaft of this second rotary, and motion is communicated therefrom to a third axle pulley, the same process may be repeated to ascertain the velocity of the third shaft. In this way the velocity of the mandrills of the most violent motion may be accurately ascertained.—*Selected.*

From the Eureka.

VINEGAR MAKING.

BY PROF. L. D. GALE.

Good vinegar is not universally found amongst the farmers of our country. In the Western States it is rare to meet with a good article, and yet it is as easy and practicable as any other product of the farm. In New England, vinegar is generally made from apples, by throwing aside into an empty cider barrel stationed in the garret, all the drippings of cider, sour beer, &c., and drawing out from time to time for the uses of the table, and for pickling.

In the Western States it is often made of diluted whiskey, mixed with sour beer and other fermenting liquors.

In Texas it is frequently made by sour or green grapes, and the washings of whiskey barrels. This makes an inferior article, being a mixture of acetic acid or true vinegar, and a combination of tartaric acid and potash. Vinegar is an article of great antiquity, it is often mentioned in the Old Testament, and is manufactured both here and in Europe, by two general processes, all others are but modifications of the one or the other of these. The first is the distillation of wood in iron cylinders, and condensing the acetic vapor by cold water: the second consists in the acetic fermentation of saccharine or alcoholic liquids.

In England the vinegar is made either from the distillation of wood, or from the fermentation of malted liquors.

In France it is manufactured from sour wines, and hence the name *vin-aigre*—wine-sour.

In Germany it is made both from sour wines and from whiskey. English vinegar generally contains sulphuric acid. Indeed, this is allowed by government to the amount of two to five per cent. As this prevents the formation of mother, which is a vegetable substance, I presume this object must constitute the basis of the permission. I am somewhat strengthened in this view from having been applied to by an American, who had shipped vinegar to England, desiring to know how he could prevent the formation of "mother" in vinegar, as much had accumulated in the article sent out, which could not be sold on that account. The remedy in such a case is sulphuric acid two or three per cent.

Many years ago it required months to make good vinegar, but by the aid of science and much practical skill, the Germans have introduced a process by which the work of months is brought within the compass of a few hours. The best of vinegar is now made in from two to four hours.

In a standing cask eight feet high, and four feet in diameter, it is practicable to make thirty to forty gallons in a day of twenty-four hours.

The apparatus used in the quick, or German process, is very simple in its construction, and is easily made.

It may be made of one length of stave, as here represented, or of two whiskey, or molasses hogsheads; or, lastly, it may be made of two wine butts: the latter, perhaps, is preferable.—The chines of the lower one, and the lower chine of the upper, are to be trimmed off, so that the upper cask may be received into the lower one. But previous to this operation, the upper part of the lower cask, and both heads of the upper one should be removed, and the cask made clean. Now set it in its place, and bore eight small holes, say half an inch in diameter obliquely downwards, for the purpose of supplying air to acidify the vinegar stock. The direction being for the purpose of preventing any vinegar from running out at the holes.

We will suppose the stand set up in its place, the next step is to fill it with beech or other

shavings. This wood is the best, but other wood may be substituted, as black birch, ash, white or black oak, white poplar, &c. The last is often used, but soon becomes bad and should be renewed at least once in three years, and besides, the vinegar has a slight bitter taste. Any kind of maple that splits well will do. The shavings should be made in a particular way; they should be the thickness of an eighth of an inch, twelve inches long, and rolled into a coil. They should be an inch or an inch and a half wide.

They are best made by planing with a wide and open-mouthed plane from the edge of a plank cut into twelve or fourteen inch lengths.

The next thing to be done, is to fill up the stand to within eight inches of the top, and there support by means of wooden pins, a hoop on the inside, sufficiently thick to support on it a false head filled with quarter inch holes; say two inches apart, and with two chimney holes one and a half inch diameter, for the purpose of ventilation. The stand is now ready for working, and is put in operation by procuring sufficient good vinegar to thoroughly wet the shavings, by pouring it on the false head. The attainment of this point is known by the liquor running out freely through the faucet below.

Put a thermometer in one of the chimneys, lay a cover over the top and leave the stand to itself. The temperature of the room should be from seventy to eighty degrees.

In from forty-eight to seventy-two hours the thermometer will begin to rise, and will stand from eighty-five to ninety degrees. When it has reached eighty-six degrees, draw out from the faucet a pailful of the vinegar, and pour up as before, and if there be not enough to run again freely through the shavings, more vinegar must be supplied. For a few of the first feedings it may require more than a pailful. The thermometer in the chimney will now sink several degrees, and must be left quiet until the heat comes up to eighty-six degrees, which at first will require several hours; now draw out and pour up again, and so continue to do, at intervals of an hour, until the liquid and shavings are sufficiently soured; which is ascertained by the taste of the vinegar, but still better by analysis.

When the shavings are once well acidified, they will ordinarily heat up so as to require feeding once in an hour, and may be managed in the following manner:

Pour into a reservoir for stock one measure of proof whiskey, and nine measures of pure soft water, and if you have any old cider, or sour beer, you may add one measure of it to the stock reservoir.

Of this mixture you may pour up two and a half gallons, and when it has run through, and the heat has again come up to eighty-six degrees in the chimneys, (say in about an hour,) draw out from the faucet and pour up, and let it run through a second time, when if the stand be in good order, the vinegar is finished; otherwise it must be run through a third time, when the heat has again come up to eighty-six degrees. Suppose the vinegar to be finished with the second run, then stock will be fed when the heat reaches eighty-six degrees.

The strength of vinegar is a matter of much importance to the buyer as well as to the manufacturer—it is the absolute quantity of acid contained in a given measure or weight of it, and is generally ascertained by carbonate of potash, which neutralizes the acid. The vinegar to be tested is poured into a glass measure, and a wide-mouthed 2 ounce vial filled with dry carbonate of potash, and exactly balanced in a small apothecary's scales, and small portions of it added to the vinegar until litmus-paper when immersed becomes violet blue, instead of red. Weigh again the carbonate of potash, and deduct the quantity used, it is the representation of the strength of the vinegar tasted.

Good commercial vinegar will neutralize thirty grains of carbonate of potash—very strong vinegar, such as is used in white lead works, will neutralize thirty-six to forty grains. The former requires ten per cent. proof whiskey, and the latter fifteen or twenty per cent.

When a person makes his own vinegar according to the directions here given, he might, if he chose, substitute for the stock made of whiskey and water,—sour beer, cider slops, the washings of cider barrels, &c. &c., and instead of working the stand hourly, or every two hours, as when it is made a business, the vinegar would be drawn out and poured up every time any new material is added to it; and in this case the air holes, instead of being bored eight inches from the bottom, should be at or above the bulge of the lower cask, so as to allow of room for the vinegar to be kept on hand. In this case, the size of the holes for supplying air should be one-eighth of an inch instead of one-half an inch. It may be remarked that these directions are sufficient for the purposes of the farmer or any one who desires to make his own vinegar, but they are not critical and minute enough for the manufacturer. Much skill and experience is requisite to compete with those already in the business. For it is a distinct and large business, especially in the neighborhood of New York, where not less than fifteen or twenty thousand gallons are daily made in and about the city, consuming some fifteen hundred or two thousand gallons of proof whiskey.

This subject leads me to notice a remark often made, that descriptions and processes given in books are not to be depended on in practice.—The very expression carries absurdity upon its face, asserting that knowledge, because put in

writing cannot be available, when the very same information, communicated orally, the same language used—success attends it. That such is often the case, I admit; and the reason lies, not in the impracticability of communicating the necessary knowledge, but in the object sought, which is, in almost all cases, to communicate to the mind a general understanding of the process to be performed. Now in all cases where descriptions are given on paper, much of the detail which could be communicated in oral instruction is generally left out, or taken as granted the operator knows. Many circumstances are not noted down which are absolutely necessary to be attended to, and these are often as indispensable as the most prominent parts of the process.

Now if the writers of these descriptions were as minute in their details as those who give oral instruction, the result would be that nobody would have patience to read the books, and hence the very object of the description would be defeated.

In the above description of the quick vinegar process, there are many details which are necessary and even indispensable where it is pursued as a money making business, that are entirely left out, as otherwise the article would be too tedious for the general reader; although the description would answer for such as wish to manufacture for themselves.

RATS.

A red herring firmly fastened by a string to any place where rats usually make their run will make them leave the place. It is said to be a fact that a toad placed in a house cellar will have the effect of expelling those noxious intruders.—*Bangor Mercury.*

CURE FOR CONSUMPTION.

An officer in the British service, resident in the East Indies, had been stricken with the fatal disease, and was reduced by it to nearly a skeleton; his friends looked upon him as a doomed man, and he himself had given up all hopes of long continuance of life. He was one morning crawling about his grounds, and accidentally went into a shed where a man had been bottling some wine; and at the moment of his master's entrance had just melted some rosin to seal the corks with. It could not be otherwise than that those within the room should inhale the smoke arising from the rosin. To the surprise of the afflicted one, his respiration became free and unobstructed and it instantly occurred to him that the relief he experienced was produced by his having inhaled the rosinous smoke. He remained better during the day, and without consulting his doctor repeated the experiment in his sleeping room. That night he slept soundly—a blessing he had not known for years.

Twice a day, for a week, did he continue his experiment, and with increased success. He then mentioned the affair to his medical adviser, who was equally surprised with himself at the improvement of the patient's health, and advised him to continue the inhalations night and morning. In the space of three months his cough left him, and his appetite returned. In six months his health was so improved that he contemplated returning to his native country; he delayed, however, doing so until a year had expired. Still persisting in his new found remedy, his health was complete restored, and he was once more a sound man.—*Selected.*

CEMENT.

It may be of importance to some of our readers to know that a highly valuable cement, capable of withstanding the action of water and the atmosphere for a long time, may be made by mixing the following ingredients in the manner prescribed below:

To a quart of vinegar add the same quantity of new milk. Separate the curd, and add to it the white of twenty eggs. These should be beaten well together, and sufficient quick-lime sifted in to give the mixture the consistency of common paste. Fractured and broken vessels, mended with this composition, seldom separate when exposed to the action either of fire or water.

NRW YORK FARMERS' CLUB.

On Tuesday, 17th, a regular meeting of the Farmers' Club was held at the Rooms in the Park, Judge Livingston in the chair. Judge Meigs read a communication from a Vermont Farmer, in which it was argued that, by planting only the large or prominent *eyes* of the potato, you will obtain a greater yield and have less small ones. This opinion was corroborated by Messrs. Watson, Dye, Hyde, and the Chairman. Mr. Watson thought it best to have *two* good sound eyes in each portion planted as seed; for if there is only one eye, and that happens to die, the whole of that particular plant perishes.

The hour for general remarks having elapsed, the regular subject came up—"The Improvement of exhausted and Unproductive Lands, especially those which have been long under cultivation." Dr. Underhill said that if wheat was intended to be cultivated, lime must be used. If a farm is to be applied to some particular cultivation, as, for instance, orchards, which may stand uninterrupted fifty years, give the land the materials that are particularly calculated for that growth. But if land is wanted for *all* kinds of crops, pursuing with them a regular rotation,

then the farmer has to give it the materials that belong to all those plants. The ground must be constantly supplied with those matters which every plant draws from it. On pure sand, clay must be used, to give it sufficient tenacity and density. And every farmer must know the nature of soils before he can accomplish much.—We have been trying to regenerate lands when we know nothing of the materials of which the soil is composed. If *muck* (composed principally of peat and leaves and other decomposed vegetable matter,) is used, it requires the addition of lime to decompose the sulphate of iron or copperas which always abounds in bogs. If lime is put upon muck, layer for layer, it will make good manure in a very short time. (We believe the Doctor said six weeks, but are not certain.) If manure is wanted at once, put lime in, and you have it.

Judge Van Wyck said the gentleman had undoubtedly taken a very correct view of the effects of these manures on soils; he coincided in the views of the Doctor, and proceeded to classify the fossil and mineral manures, the latter being composed of the four primitive earths, showing that if any plant is deficient in any one of these, it will not mature.

Professor Mapes stated that near Spotswood, New York, there is a large tract of sandy land that seemed nearly useless. Dr. Underhill's experiment with muck had been tried there with success. The water of two or three mill streams brought down and deposited great quantities of this muck. On the banks a large deposit has been made, which was used alone and as mixed with lime on farms in the vicinity; and from one acre of previously entirely unproductive land were obtained 318 bushels of potatoes, 50 loads of manure being used to the acre. In that land there is a great deal pyrites, which form sulphate of iron. He was not aware that these are decomposed, although they are of great benefit to all agricultural operations. In the vicinity of that town, the farmers, by the use of muck, can raise peaches at two-thirds the cost of potatoes, and find them equally profitable. Every vegetable from which alcohol is made, contains a *trace* of iron, and very generally of copper.

Mr. Hyde inquired if the alluvial deposit does not contain quantities of calcareous earth? .... Professor Mapes answered "Yes, but not in large quantities."

Mr. Watson related an experiment he had tried, we think, in England on one-eighth of an acre of land, in order to test the effect of large quantities of lime. People in the vicinity repudiated the idea of applying more than forty bushels of lime to the acre, but this quantity, he said, is of no account at all when it is ploughed in. On this eighth of an acre he put thirty-five bushels of lime, and planted various vegetables in alternate rows in the patch, which flourished luxuriantly, while all the remainder of the field became so hard that a plough made not the least impression, the land being very much parched. Lime, as exemplified in the patch he had cultivated so carefully, has the property of holding water, and thus affording nourishment to plants, even in the driest seasons. In order to make sandy land retain moisture, clay should be used; marl is better. What is called *fat* marl will produce good vegetation without the aid of either animal or vegetable manures. An instance of the trouble arising from *couch grass* in fields was mentioned by the speaker, who had rid his land of this pest by paring and burning; and approved of this practice, as being of great benefit to any land. After the grass was exterminated he endeavored to cultivate that land. He sowed oats the next year, and the first that grew up had stems of the thickness of a man's finger, but not an oat in them. The fourth year barley was planted and yielded sixty-four bushels to the acre, which he sold at ten shillings sterling per bushel. Lime should not be used on land that is already free, unless clay is first employed to stiffen the soil.

Professor Mapes said that in New Jersey the farmers use lime on very *sandy* land, so light as almost to be blown about, and the practice is explained by them thus: that the lime partially makes mortar of the soil, and thus brings the land into good condition. The next best manure to muck alone is lime alone, but to have them mixed they do not act so well. Either lime or muck alone should be used. It has now become a question among scientific men whether manure does not configure the earth, enabling a plant to retain carbonic acid until it becomes suited to receive it from the atmosphere.

Messrs. Hyde and Watson followed in farther remarks on the same subject. . . . . Professor Mapes related an instance of making the ground rather too rich for proper vegetation on Philadelphia Neck. . . . . Mr. Watson made a few remarks on breast ploughing—he did not think as good as the ordinary mode, on account of the expense—for a man cannot breast plough one acre under eight days.

The Club then adjourned.

CASTOR OIL MADE PALATABLE.

Castor oil may be most easily taken mingled with orange juice, if the orange be not ripe and sweet. The difference between this and any other mode of taking this valuable medicine is surprising.

POPULAR ERRORS.

Shrinking and Swelling of Meat in the Pot.—When children, we used to be told that pork, beef, &c., killed in the *old* of the moon, would

shrink in the pot; and if in the *new it would swell;* and a great many good, honest farmers, religiously observed her waxing and waning quarters for their periodical packing. That some meat shrinks, while other swells, is a fact too notorious for cavil; but that the moon is to be praised or blamed for this agency we most fully deny. The true cause of these changes is to be found in the manner of feeding the animals before slaughtering. An animal that has been long and well fed, till the fat cells have become fully charged with solid matter, will, on exposure to boiling water, absorb a portion of it, and consequently swell the dimensions of the flesh; while that which has been hastily or but partially fattened, will diminish in cooking from the abstraction of the juices which occupied the cavities or spaces between the lean fibres. This is the *whole secret* of the *shrinking* and *swelling* of meats. It will thus be perceived that one carcass of equal weight may differ materially in value from another of nearly the same apparent quality. This difference in value is equally manifest in the quality of fish and poultry.—Eggs from well-fed hens are also much more rich and substantial than those which are produced by hens sparsely fed. The latter will invariably be found meager and watery.—*Ex.*

ASPARAGUS.

Horticulturists say that the best way to kill weeds on asparagus beds is to water them liberally with beef or pork brine. The salt kills the weeds, while it nourishes the asparagus, which is a maritime plant, and grows the better for having salt.

TO REVIVIFY OLD PEAR TREES.

In the *Horticulturist* we find the following report of an experiment tried on two old pear trees which had ceased to bear any thing but blighted, miseable fruit, hardly worthy of the name:

In the month of October, 1843, I took in hand two large and thrifty Virgalieu pear trees, about twenty or thirty feet in height. I first scraped off all the rough bark, and coated the trunk of the tree over with a paint brush. I next cut out about one-third of all the poorest branches, and shortened the head of the tree one-third, by "heading back" the principal limbs, covering the wounds after paring them, with the "shellac solution," (the best thing I have ever tried,) recommended on page 32 of the "Fruits and Fruit Trees of America."

I then dug a trench, four feet wide around the whole ball of roots, untouched about six feet in diameter. The roots—all the roots, large or small,—that extended beyond this ball, I cut off; and I should judge that I cut off about one-third of the roots; or, as you advised me, about an equal proportion to the branches reduced.

The trench itself, which was four feet wide, I dug twenty inches deep; and carted away all the old soil from it to another part of my garden. I next carted in an equal quantity of soil from a field of good pasture, where the sod had not been broken up for several years. I drew this earth, composed pretty largely of the sod itself, and filled the trench around both trees.

To each tree I then applied the following substances, viz: two bushels of refuse or scoriæ from a blacksmith's forge, two bushels of charcoal pretty well broken, and two pounds of potash well pulverized. These substances I had on the spot, and mingled them with the fresh soil as it was put in the trench. After the trench was full of soil containing these stimulants, I had the whole of its contents thoroughly intermixed, by turning them over and over again with the spade. This is the whole of the process. Now a word about the results.

The first summer after the trees had been operated upon—that of 1844, I was surprised and delighted with the luxuriance and vigor of the new growth. It was very healthy, and had the appearance of that of a very fine young tree. Suffice it to say, the tree had formed a new and handsome head.

Next season, 1845, it blossomed moderately. But almost every blossom set, and gave me a fruit. Every fruit, to my great joy and satisfaction, was large, fair and smooth; the growth was clean and healthy, and the leaves dark green in color.

This year, I have had a fine crop: two bushels from one tree, four bushels from the other. They were superb fruit—genuine, old-fashioned Virgalieus; and I cannot doubt that my trees will continue to bear such for many years.

I need not say, that I and many others are convinced by this experiment, that the pear tree, of many sorts in my neighborhood, have failed from a want of proper sustenance in the soil.—Whether the receipt you gave me, may be improved upon or not, I cannot say; but I can say, that, so far, it has answered perfectly; and it is my belief that every old and enfeebled pear tree, that bears cracked fruit, may be restored to good health and a fine bearing condition by following the same rules. J. B. W.

A PORTRAIT.

The following, says the Western Farmer and Gardener, is the portrait of a genuine anti-book farmer:

"He ploughs three inches deep, lest he should turn up the poison that, in his estimation, lies below; his wheat land is ploughed so as to keep

as much water on it as possible; he sows two bushels to the acre and reaps ten, so that it takes a fifth of his crop to seed his ground; his corn land had never any help from him, but bears just what it pleases, which is from thirty to thirty-five bushels, by measurement; though he brags that it is fifty or sixty. His hogs, if not remarkable for fattening qualities, would beat old Eclipse at a quarter race; and were the man not prejudiced against deep ploughing, his hogs would work his ground better with their prodigious snouts, than he does with his jack-knife plough. His meadow lands yield three-quarters of a ton to a whole ton of hay; which is regularly spoiled in curing; regularly left out for a month, very irregularly stacked up and left for the cattle to pull out at their plasure and half eat and half trample under foot. His horses would excite the avarice of an anatomist in search of osteological specimens; and returning from their range of pasture they are walking herbariums, bearing specimens in their mane and tail of every weed that bears a burr or cockle. But oh, the cows! If held up in a bright day to the sun, don't you think they would be semi-transparent? But he tells us good milkers are always poor! His cows get what Providence sends them and very little besides, except in winter, then they have a half peck of corn, the ears a foot long thrown to them, and they afford lively spectacles of animated corn and cob crushers; never mind, they yield, on an average, three quarts of milk per day! and that milk yields varieties of butter quite astonishing.

For the Southern Planter.

THE FIG.

Mr. Editor,—An Inquirer, in the last Planter, wishes to get information as to any successful method of protecting the fig and making it fruitful in our climate. I have long known the art—practiced it successfully in one of the most frosty positions (Bremo, Fluvana county,) in middle Virginia, and take pleasure in making it known through your widely circulated periodical.

Nothing more is necessary than to bend the branches down to the surface of the earth as near as they can be brought without breaking, and covering them with the adjacent soil fifteen or eighteen inches thick. This process ought to be performed soon after the leaves have been killed by the frost, and the covering should be removed in the spring after decided indications of the sap being in motion in other trees. The fig will not live one year in five, through the winter in the open air at my place, but by the above course of proceeding, I have an abundant crop every year.

JOHN H. COCKE.

November, 1846.

From the Farmer and Mechanic.

FATTENING HOGS.

Friend Starr,—As this is the season for fattening pork, a few remarks upon the subject may not be uninteresting to your numerous agricultural readers.

To fatten a hog or an ox where there is plenty of corn and potatoes requires no great skill, but to do it in a manner that will render the animal more valuable to the farmer, when fit for market, than the substance consumed in fattening would be, besides paying for the trouble of doing it, is a matter worthy of consideration.

The summer of 1836 being very dry, my corn and potato crop came in light, and compelled me to try an experiment, which I found to work so well that I have since followed it to my entire satisfaction. It was this, I adopted the feeding apples, of which I had an abundant crop, mixed with pumpkins, a few potatoes, and a small quantity of meal prepared in the following manner. For convenience I set in my swill house, adjacent to the stye, a large iron kettle, holding about nine bushels, and then had a wooden cylinder made that held from twelve to fifteen more, and hooped with iron bands, just large enough to set upon the arch outside of the kettle, and by putting a little clay or mortar on the arch before setting on the leak, (as I called it,) I made it perfectly tight, I then had a cover or lid fitted to the top, which was also made tight or nearly so, by laying on a piece of cotton cloth or canvass underneath it, before putting it on.

Into this kettle I first put about three bushels of potatoes washed clean, then filled to the curb with cut pumpkins, and filled the curb to the top with apples, adding two or three or more pails of water, in proportions to the quantity of meal that I intend to mix with it after mashing. After letting this boil awhile I remove the cover and fill again with apples, and again make tight.

The apples and pumpkins, you will notice, are steamed by this process, and when all are sufficiently cooked, they are taken out, well mixed, and a half bushel corn meal or a bucket of ground oats and peas, or of buckwheat and rye, instead, added to the mixture while hot, and thus rendered more valuable for being cooked with the mass. I think that sweet apples fed in this way to hogs are worth nearly as much as potatoes, and sour ones more than half as much.

I never made pork with as little expense or less trouble than since I have practiced this method.

I now prepare most of my feed in this way for fattening my beef and mutton, and find it equally advantageous, indeed I believe that I get the best profit from feeding sheep in this

way, particularly my old ones. My course is, in the month of October, to select from my flock all that do not promise fair to winter well, old ewes in particular, which will be likely to die in the spring, as all sheep growers know that they are liable to do, and give them a good chance for fall feed, and also feeding them with the same kind of substances that I do my hogs, and by the first of January have them all first rate mutton, bearing good fleeces. This kind of feed is excellent for milch cows, and cows that come in early, or for ewes that are with lamb. It does well to mix with cut feed, only there should be more water put into the mixture.

When my potatoes get short, I put in beets and carrots for my sheep and cattle, and consider them much better for being cooked. Turnips are easily raised, and are very good food for sheep or cattle during the winter, yet will not compare in value with either carrots or beets. Potatoes or pumpkins are valuable for horses, fed raw. I never knew a horse to be troubled with the botts that was fed with a few raw potatoes every week.

I have made my communication rather desultory, but my principal object in this communication is to show the value of apples for fattening hogs and sheep when mixed with other substances, and the saving to farmers from picking out their old sheep and fattening them, instead of pelting them in the fall or letting them die in the spring, as many do.

When a sheep gets old and the front teeth partly gone or pointed, the best way is to take them out entirely, as they feed better without than with them.

Yours, A VERMONT FARMER.

Windsor Co., Vt., Nov. 1, 1846.

PLANTATION CORN MILLS.

We know nothing that is more eagerly sought for than a corn mill that is adapted to the farmers own use. Many attempts have been made, as yet, we believe, without entire success, to combine the simplicity with the efficiency that is required in such a machine. We notice in the last number of the American Farmer the following description of a new one gotten up by Messrs. Sinclair & Co. of Baltimore:

Many plans have been proposed and mills made for grinding corn, &c., by horse power, for plantation use, and most of them condemned by the planter, either on account of the high price charged, imperfect and complicated construction, or great power required to drive them. These objections we have endeavored to overcome, both for our own, and for the benefit of our Southern customers, most of whom are desirous to introduce a good mill on their plantations, and who have endeavored to aid us by their plans and advice. Among those gentlemen, we may name Mr. Remington, of Alabama, whose reputation as a successful planter, is not surpassed by his inventive genius; to him we are indebted for the Alabama Corn Mill, which has recently undergone considerable improvement by himself, aided by Mr. Maynard, of our firm. The construction and plan of this mill, overcomes the objections made against domestic mills, and will no doubt prove a valuable addition to the agricultural machinery, now in successful use. The principal novelty of this mill is, the simple manner of adjusting the stones to cause a regular and equal bearing, the inclined feeding spout through the stationary stone and the peculiar mode of cutting the stones, which, when brought in contact, act on the shear principle, causing the grinding to be rapid and more effectual than can be done by stones of small diameter, cut in the ordinary manner, at the same time reducing the draught to the power of two horses. The stones, (French burr,) and band pulley, run vertically instead of horizontally, (as most domestic mills are made to run,) which improvement reduces cost, is more simple, works with more ease to the horses, is easily adjusted, and more convenient to be driven by horse powers now in common use. Each mill has a bolting screen or box attached, as exhibed by the figure. We have ground two and a half to three bushels of fine corn and buckwheat meal per hour, and four bushels of corn, rye, &c., suitable for cattle in the same time; this estimate may be relied upon, the mills having undergone several fair and actual tests, both as regard quantity of meal ground, quality, &c.

The only repairs necessary will be to take out the stones and face or "pick" them once a year, which may be done and the stones reset by any careful farm hand. Price sixty dollars. Manufactured and for sale by R. SINCLAIR, Jr. & Co., 62 Light Street, Baltimore.

Mrs. Howard, wife of Joseph Howard, of Sauquoit, Oneida county, between the middle of March and the first of October, of this year, made 233½ pounds of first-rate butter, from the milk of only one cow. In addition to this, the calf was kept with the cow till it was fit for veil, (over four weeks,) and the family had abundance of milk to use. Mrs. Howard is a prudent and industrious wife, and few such cows under her care and management would make a fortune for any man. This cow can't possibly be the one that "eat up the grindstone." We mention this fact because some of Mrs. H.'s connexions live in this county, and they can't be beat in the butter and cheese line.—*Penn Yan Democrat.*

THE SOUTHERN PLANTER,

Devoted to Agriculture, Horticulture, and the Household Arts.

Agriculture is the nursing mother of the Arts. *Xenophon.* | Tillage and Pasturage are the two breasts of the State.—*Sully.*

NEW SERIES. C. T. BOTTS, Editor. VOLUME I.

VOL. VI. RICHMOND, DCEMBER, 1846. No. 12.

For the Southern Planter.

GRASS.

Mr. Editor,—The only apology I can offer for addressing you this letter is, that I have been a careful reader of your paper (viz: the Planter) from the very time of its commencement. I am not a subscriber, but my father, although he is not farming, takes the Planter, and as soon as he reads it, he forwards it to myself and brother. I have been a farmer in Clarke county since 1839, which you know is one of the richest and best cultivated counties in the State, the land being rated at from thirty to sixty-five dollars per acre. My means being limited I have been induced, (by the opinions of my father,) and also what I have read in your valuable paper, to leave this fine wheat growing country, which is filled with industrious managing farmers, to come and settle in the county of Amherst among strangers, the most intelligent of whom tell me that grass (that is, timothy, &c.) will not grow on the lands in this part of the State, and that I will not find a wheat nor corn crop to be profitable; and that the broom sedge land of which there are thousands of acres in this county, will not produce more than one barrel of corn per acre, under the best management and with the best season. It would be proper in me to state to you that I am a renter for the present, with the view of testing the capacity of the lands in this part of Virginia, and if they should prove to be what I think and hope they are, I expect to locate myself permanently. If I should be successful in cropping, I shall report to you the process of my preparations, &c., on this farm, which is runaway with bushes, briers and broom-sedge; even the garden is a wilderness of bushes and briers. I shall farm upon the five-shift system, using clover and plaster freely.

I brought to this county with me this fall five kinds of wheat, viz: Mediterranean, Georgia, Golden-straw, Genesee White and Zimmerman, all of which have succeeded well in Clarke county for several years, except the Zimmerman, which has only been introduced in Clarke within the last two seasons. It was thought to stand up during the wet weather last summer and ripened better than most other kinds did, and it sold readily at harvest for seed at one dollar per bushel, when other kinds of wheat were worth only from sixty to seventy-five cents per bushel. Hoping that there was a brewery in Lynchburg or Richmond, I brought with me and have seeded two bushels of barley. I think that this crop would be a desirable one, if I could find sale for it, at from fifty to seventy-five cents per bushel in Richmond. Do you know of any one in Richmond who would purchase it for a Baltimore brewery, or one who I could consign it to, who would send it to Baltimore and make sale of it for me. I wish to purchase the most approved four-horse threshing machine that is now made in Richmond. Any information you can give me respecting such a machine would be very thinkfully received. If you would only give me the name of the best manufacturer of machines in Richmond at this time, and state, that in your opinion, a machine from him would be well made, I would feel under many obligations to you, and would write to him on the subject.

If you know of one, two, or three farms of from two to five hundred acres each, in the counties of Nelson, Amherst, or Bedford, that can be leased for two or five years, I would be much obliged to you if you would give me such information as would enable me to find them, I would insure the land to be better cultivated than it has ever been, and clover and plaster should be used, and a fair share of the crops would be given as rent, or after the first year a moneyed rent would be given, if preferred. If you should not know of any land for rent, you may possibly know of some one who wishes to discontinue the cultivation of tobacco, and would be willing to have his land farmed by joining forces with a tenant who is accustomed to cultivate any thing except tobacco, to such an one I would say I am willing to put five hands against five hands and give a share of the crop, each bearing a proportionate part of the expenses, &c.

Whenever it may suit you to answer this letter, it shall be much appreciated, and if at any time I can give you any information I think would be valuable to you, I will do so with pleasure.

Direct to Amherst Court House, Virginia.

With very great respect,
I am your obedient servant,
ISAAC IRVINE HITE.

Glen Ambler, Amherst, Nov. 15, 1846.

We hardly know whether Mr. Hite intended this letter for publication, but we thought it was

the best way of obtaining a satisfactory answer to his inquiries. The old worn-out lands of Virginia need only a few such managing, trustful farmers, as we take Mr. Hite to be, to cause them "to blossom as the rose." We shall be glad to hear the result of his encounter with the broomsedge.

From the Farmers' Cabinet.

CURING HAY.

On the 87th page of the last number of the Cabinet is a statement of expedition in collecting and storing hay, and an opinion given in respect to the condition of that hay, which, should it be the means of inducing the general adoption of such a practice, would be productive of great loss.

The relative value of labor and hay, and the risk of sustaining damage from rain, and incurring additional expense, has led to the general practice of hurrying it in, in such a condition that much of its value leaves it in the mow. In a practice of more than thirty years, I have seen but two instances in which such was not the case—they were under circumstances of unusually continued drought.

The quantity of salt said to be used, though much too small to produce the effect ascribed to it, was too great for the benefit of the cattle.

The statement that it contained, when put in the mow, "all the nutritious qualities required to form flesh, bone, muscle, and to promote the growth of the animal to be fed on it," is admitted: but that it will remain so, the laws governing organized matter, will not allow me to admit; and had the operator taken quantities of the grass cut on the second day—put one parcel in the centre of his mow, and exposed the other in a proper manner to the influence of sun and air, even till the seventh day, and weighed the two next winter, he would have found that the grass put by to be dried by the heat produced by the decomposition of its own substance, had lost the most in weight: had he then fed the two parcels under circumstances that would have enabled him to test their relative value for supporting the strength and maintaining or increasing the weight or produce of the animal, he would have found that it had lost even much more in value than it had in weight.

Why this must be the result I will endeavor to explain. All substances capable of sustaining animal life, are combinations of three or four simple elements united, not in the manner or order of their natural or inorganic affinities, but as they have been induced to unite by the vital force, and can only be maintained by preserving them from the influence of disturbing causes. Such a cause are moisture and heat—where they are present new arrangements less complex will be formed, and unless moisture or temperature fail, the organic arrangement will be utterly destroyed, and the most nutritious compound will be converted into water, carbonic acid, and ammonia.

So far as the support of respiration and the maintenance of animal heat are concerned, the value of any substance adapted to animal subsistence, is represented by its capacity to unite with oxygen: in a mow of hay, the capacity to unite with oxygen is reduced in proportion to the amount of heat generated, including that which is sensible and that which is rendered insensible, by uniting with the water to convert it to vapor. Nor is this the worst effect produced. As nitrogen is weak in all its affinities, the substances containing nitrogen—and such only are capable of forming flesh or repairing the waste occasioned by exertion—are more easily disturbed than those that do not. Decomposition commences on them—they are, therefore, more reduced in quantity than those that support respiration and maintain animal heat.

As the heat given out by the union of oxygen with organic substances when reduced to their natural affinities, is a fixed quantity, whether that result be effected by fermentation or combustion, we shall not be far astray when we adopt it as a conclusion governing our proceedings, that it will be requisite to feed with hay that has been heated in the mow, as much grain, as being burned, would have produced the same amount of heat, to produce the same result that the hay alone would have done, had it been made so dry that it would not have heated.

There are probably few agriculturists who have not noticed the difference in the result from feeding hay and the grass of which the hay was made; yet there are many who would contend that hay is not injured, but rather benefited, by a considerable degree of heat in the mow. To me it would appear as rational to contend that water, carbonic acid, and ammonia passing into the air, can sustain an animal as well as caseine, fibrine, albumen, gum, sugar, starch, passing into the stomach.

E. G. Passmore.

For the Southern Planter.

PEACHES.

Mr. Editor,—You have so handsome a way of making acknowledgments for an *inch* given, that one feels obligated, under bond and seal, to furnish the *ell*. At any rate, if contributions to the Planter will be accepted by *measure*, I feel less unwilling to try my hand. If you were so pleased with the *last runnings* of my crop of pears—for I had no opportunity of sending any until the best were gone—the wonder is, what

you would have thought of my best peaches, could I have sent you some of them. But come and see me, when they are in bearing, and, I think, I shall enjoy more, in witnessing, than you in eating.

After previously rearing two orchards, I came to my present residence, nearly ten years ago. Having a passion for fruit, I commenced my third orchard. For peaches and apples, I used seed, greatly preferring them to scions from old trees. If properly budded, and well nursed, peach trees will begin to yield fine fruit, by the fourth year from the stone. Apples, from the sixth to the tenth, from the seed. Pears—about which you specially inquire—are also much better, when the stocks are raised from seed. But I could not procure seed, and if I could have done it, was not willing to wait for trees, which grow so slowly, in their infant state, that the adage says, "he who plants a pear seed, never lives to eat the fruit." I know this to be not exactly true. But finding myself growing old, I was in a hurry, and procured from the piney old fields, the largest saplings and scions I could find. These I planted early in the spring, cutting off all their limbs, that new sprouts might put forth, in which I might insert the buds of choice fruit. They were planted in rich land, with a strong clay substratum, and have been kept well worked ever since. They were budded, as soon as practicable, with such varieties as I liked, all the limbs except those budded kept pruned away, and I am now enjoying rich fruit from my labor. I might stop here, having told my experience, but I do not think I have measured my *ell*.

Had you been much acquainted with some of our middle counties—say Cumberland, Buckingham, Prince Edward and Charlotte—you would hardly have fallen into the deception, that our climate was unsuitable to the production of as fine pears "as ever melted in the mouth of man." The elder Peter Johnston, father of the late Judge of that name, procured—as tradition says—from Prince's nursery, about the time of its commencement, the Autumn Bergamot and other fruits not often equalled. There are many native varieties of the pear, in this region, well worthy a place in any nursery. Have you never heard of the Brunswick pear? It is cultivated by the Edmonds family, I believe, of that county. The late Colonel Edmonds sent twigs, for grafting, to gentlemen, in this region, and the fruit is fine. My friend, Col. Charles Woodson, of Prince Edward—now dead—produced several fine new varieties in the following manner. He planted the seed of all the best kinds he could procure. As soon as the young trees grew five or six feet high, he peeled off, from a limb of each, a ring of its bark, in the spring of the year, about the eighth of an inch wide. This prevented the descent of sap, and caused the limb to grow much larger above the point of operation. Such a limb invariably bloomed the next spring, and it was found necessary to tie it to a firm stake, to prevent the weight of fruit from breaking it down. If the fruit proved good, he propagated, by budding, from the tree—if bad or indifferent, he budded it, from some good tree. He also produced some beautiful dwarf trees, which bore fine pears, by budding the pear into the hawthorn. Such efforts, though not original, are laudable and often highly remunerative. The noble spirit of the late Rev. John Kirkpatrick, of this county, caused him to do more, in the propagation of fine fruit—especially pears—and of fine stock, than any man I have ever known; and it would be difficult to estimate the indebtedness of this region—independently of his labors in his sacred calling—to that good and highly gifted man.

After so much desultory writing, a few remarks on the subject of budding might be acceptable.

I am frequently asked, "what is the proper season for budding?" I answer, at any time when the sap is running sufficiently for the wood to be separated, with facility, from the bark of the bud. As soon as I find this can be done, in the month of April, I use buds of the previous year's formation. If these live, they grow surprisingly, as the stock will, at this early season, bear very close trimming. Indeed, I trim closely, until about the middle of June, as all buds which vegetate thus early grow considerably before autumn. I prefer that buds inserted after the middle of June should not vegetate until the next year, and of course, I trim more sparingly. I never cut away the limb, above the bud, until the latter begins to vegetate, during the season in which it was inserted. I, however, invariably do this, early in the following spring, if I find the bud alive.

For performing the operation, I prepare two sharp knives, a big one to trim with and a small one for budding. I also make a wedge of some close-grained wood—any fruit tree—by making a sloping cut, of half an inch in length, from one side to the other, of a twig a little larger than a crow-quill, and when I wish to be very particular—as in budding roses or other delicate shrubs—I hollow out the centre of this elliptical section, so as to give the little implement a gouge-like appearance. I then choose a smooth surface, on my stock, or one of its limbs—and if of the present year's growth, the better. I here make a transverse incision—after trimming away limbs, leaves and buds, above and below the point of insertion, to suit me, say from six to twelve or eighteen inches—and above this cross-cut, through the bark, I make a vertical one, long enough to suit the bud to be inserted—from half to an inch and three-fourths—like an inverted letter T; then from a twig, of the present

years growth, (except for the earliest budding,) I pare out a section, with a leaf and a good looking bud, in its axilla, about one-fourth from the lower end, the whole section being a little longer than the vertical cut, above named.—I now gently hoist the angles of bark, just above the cross-cut with the point of my knife, then, with my wedge, I carefully elevate the bark to the top of the vertical one, on both its sides. Then taking the bud between the fore-finger and thumb of the left hand, with the cut surface towards me, I insert the point of the wedge, between the wood and bark and delicately avoiding bruising or laceration, I slide the wedge between them from top to bottom, until they are separated. If the pulpy germ of the bud be torn out of its casement, I throw it away and try again. Next, with my wedge—which I keep constantly, while budding, in my hand or between my lips—I raise the bark of the stock, and with the stem of the bud in my right hand—its leaf being nearly all cut away—I insert the point of the bud under the before-mentioned angles of bark and cautiously insinuate its point to the top of the vertical incision. I now lay my knife across the bark of the bud, exactly over the cross-cut in the stock, and clip off its lower end. Then with gentle firmness, but not very tightly—lest the bud be strangulated—I wrap a woollen ligature from bottom to top of the part operated on, to keep out air and water and to preserve close contact of surfaces. In the application of the ligature I think six or eight gyrations sufficient, as a continuous rolling impedes circulation and strangulates.

The after-treatment is important. The buds, whether in the nursery or orchard must be watched. If, from growth of the stock, the string begin to bury, it must be untied. Should a bud begin to vegetate, the top of the stock should be cut away closely above it and such further trimming afforded as may throw sufficient sap into the bud to insure its rapid growth. If more buds than one are desired on the same tree, they should never be on the same stem, but on different limbs, to gain the benefit of natural forks. An artificial bifurcation, made by a bud growing from the side of a tree or limb, is not strong enough to sustain its weight long.

Fruit trees procured from the northern nurseries are generally short-lived. But if grafts are taken from them, on their arrival, or buds, before they show signs of disease, healthy trees may be produced.

The seed of all fruit trees should be buried deeply in the ground, in autumn, in little boxes, and planted in the nursery, by the first of March. If thus planted in the fall, moles and field-mice are apt to find and eat them during the winter, when other food for them is scarce.

I neglected to say that in budding I make the vertical incision above the traverse, for two reasons, because the water from rains is better excluded; and because, were the cross-cut uppermost, it might impede the descent of sap—which always comes downward through the bark—to the bud.

There are abundant directions for grafting, before the public. On this subject I will only say, that on small stocks I prefer what is called slope grafting. I perform the operation at any time, in winter, by the fireside, and bury my grafts until spring. On taking them up to plant, in the spring, I find a knotty excrescence is thrown out from the cut surfaces, which insures the adhesion of the parts. I sometimes plant them in the nursery, directly after grafting, even in winter, leaving only the top bud above the surface, and covering with straw or other litter to keep off cold. This plan has succeeded very well.

I have said enough, and perhaps too much, on fruit-raising. I will now conclude, by telling you what you must, as an agricultural editor, have long since discovered, that the want of will and industry, more than the want of knowledge, is the cause of failure, among Virginians. For instance, it requires less dexterity of manipulation to learn to bud trees well, than it does to make a good pen, and I would sooner undertake to teach the first art than the latter. But I often hear men say, "Oh, what a fine orchard I would soon have if I only could learn to bud." Teach them the art—show how simple it is, and without ever trying much, they will in a few days make the same wishful exclamation. Such men desire exceedingly to know all that is published in the "Planter." They subscribe for it, but soon neglect to read it; at any rate, neglect to pay for it, until after considerable accumulation of dues, a dun comes, they pay off and discontinue—feeling it really too troublesome to find ways of sending punctually, every year, a single dollar all the way to the city of Richmond. But *they exceedingly desire to know all that is published in the "Planter," and hate to give it up.* The truth, sir, is that he who really wants a good orchard, or to read the "Planter," or to attain any thing within the range of our capabilities, even though it be the hardest thing of all, for poor human nature *to be a good man*, will succeed, and all others, more or less, fail.

With best wishes, yours, &c.

MEDICUS.

Cumberland, Nov. 6, 1846.

P. S.—I forgot to say that in budding trees of the walnut family, I cover all the wounded surface with softened beeswax, to exclude air, leaving the bud itself, however, peeping out.

CARROTS.

I last year commenced raising carrots for stock, and, although some of my neighbors

laughed at me for farming after the Cultivator, as they called it, and I cannot boast of the crops of Mr. Risley, of Cataque, yet I got at the rate of six hundred bushels to the acre, and am satisfied it is more profitable than raising potatoes, could we get a good crop of the latter, which is very uncertain; and this year I have sowed twice as much as I did last year, and am confident I shall get one-third heavier crop, as I did not sow them last year until the last of May, which I think was too late; it was also a very dry season. I raised, last year, on one-fourth of an acre 150 bushels, which, at 15 cents a bushel, amounts to $22 50. Whole time spent in ploughing, sowing, seeding, and digging 18½ days, every hour told, which, at 75 cents a day, is $13 87. Cost of seed, $1 50; making, in all, $15 37, and leaving a nett profit of $7 12, or at the rate of $29 50 per acre.—*Albany Cult.*

From the Ohio Cultivator.

MACLURA OR OSAGE ORANGE FOR HEDGES.

(*Letter from Mr. Gowen.*)

Mr. Bateham,—Observing, in a late number of your spirited and useful paper, a reference to me, as to the running and sprouting of the roots of the Maclura, I take occasion to respond to the call—ever ready as I am, and ever will be, I trust, to enlighten my brother agriculturists, as far as my experience goes, upon any subject connected with their interests and the promotion of agricultural improvement.

From an intuitive repugnance, at first, to the unsightly post and rail and worm fences, and the experimenting upon the expense and trouble in maintaining them, I turned my attention to live fencing, as being more sightly, less expensive, and more enduring. The hawthorn—the beautiful and fragrant hawthorn—from a thousand associations, would have been the substitute for the pound-like post and bars; but then the objection presented itself, of its being too delicate for our intense frosts and fervid suns. Looking with much interest at all other sorts of hedge in use, I adopted the Osage orange, and have planted freely of them for several years. Its foliage is beautiful, its growth rapid, its pins or thorns formidable, and it stands the climate well. If all the hedges of this plant I have put down were joined together continuously, they would extend over a mile in length. The plants I procured myself since 1838, from cuttings from the roots, made and planted in manner as the morus multicaulis was, by those who followed that speculation.

The only objection to be taken to the Osage orange is the one in question; it does run considerably, and sprouts from the roots, but this is as nothing on farm land, compared to the constant repairing of post and rail fence, the loss of ground by the worm fence, and the weeds and brambles occupying the angles inside the fields; but the farmer who will have a worm fence of cultivated land, and permit a nursery of thistles and other pests to luxuriate in patches in every field, will never think of a live fence. The beautiful and shady hedge can have no charms for him, nor will he put himself to the trouble to count the difference in cost of a row of beautiful and compact dwarfed trees, planted to grow and abide forever, and that of post and rails, to be renewed every ten years, and requiring patching and setting up almost every spring.

I might give you the history of the Maclura or Osage orange, but I suppose it is familiar to most of your readers. It was called Maclura in compliment to the late William Maclure, a Scotch gentleman, a philosopher of much learning and science, and a philanthropist after the Robert Owen and Fanny Wright school.

I should have replied to your call in this matter earlier, but indisposition, and other matters and cares prevented; and even now, though much better in health, I am obliged to be very brief. Before I close, however, permit me to thank you for the interest you have manifested for the founding of an Agricultural College under my auspices, and for the favorable terms in which you have spoken of me connected with that subject. I feel that I deserve the commendation of you and your brethren of the agricultural press. I shall not be accused of vanity or egotism, by those who know me well, when I say, there are few men living, who have labored harder or with more singleness of purpose to promote the true and permanent interests of agriculture than I have done. I *was in earnest, and still am.* If Providence restores to me my wonted health and energies, I shall do that for the landed interest, through the college you have so favorably spoken of, that will more than realize your expectations, sanguine as they seem to be, and will be sensibly seen and felt long after we shall have passed that bourne, from whence no traveller returns.

Very respectfully, yours, &c.

JAMES GOWEN.

Mt. Airy, Philadelphia, October, 1846.

MEANS OF LEARNING A HORSE TO PACE.

Buckle a four pound weight around the ankles of his hind legs, (lead is preferable) ride your horse briskly with those weights upon his ankles, at the same time twitching each rein of the bridle alternately; by this means you will immediately throw him into a pace. After you have trained him in this way to some extent, change your leaden weights for something lighter; leather padding, or something equal to

it, will answer the purpose; let him wear these light weights until he is perfectly trained. This process will make a smooth and easy pacer of any horse.

These sort of expedients are all very well for an animal that is so deficient in natural form as to be unmanageable in any other way: but they are better calculated to impart a shuffling kind of gait, than the clear, bold stroke, which a good rider will induce by means of bit and rein.

UNCOMMON EAR OF CORN.

Speaking of large corn, reminds us to say that a gentleman in Harrisonburg has raised this season the *thickest* ear of that grain we have yet heard of. The ear contained *thirty-two* rows of grains!—and the cob was as thick as the usual sized *ears* of corn. The usual number of rows, we believe, is from eight to eighteen, and as high as twenty-two; but we have never before heard of thirty-two rows on one cob.

Rock. Register.

For the Southern Planter.

SASSAFRAS AND WIREGRASS.

Mr. Editor,—I wish to make a few inquiries through the Planter in regard to sassafras and wiregrass. I wish to know if there is any particular time of the year to cut it down to destroy it, or is there any way in which it can be effectually destroyed without grazing the land with cattle. I also wish to know if a thick set of clover will run out wire grass. If you or any of your subscribers can give me any information on the subject, I will be heartily obliged to you or them. For ten years previous to my purchasing the small farm on which I now live, it had been completely murdered by hard tillage, grazing and rooting. The land is of the lightest kind, and was worked in no particular system of rotation. About seventy head of hogs and forty head of cattle were allowed to run on it winter and summer, and then there was no sassafras and very little of the wiregress. In about two years after I got possession I took away the last cross fence, which was but four years ago, and since that time, both of the above named evils have made rapid progress; so much so, that it caused me to take this method to try and find out some remedy, if there is any. My reason for taking away the cross fences were many. I thought the land would improve faster; timber was valuable, being on the river; and lastly, being of very limited means, I was not able to hire a force sufficient to keep up so much fence, there being none on the farm worth anything. I am sure if the former owner had stayed here until now, with his hogs and cows, that all hands would have starved; for I do assure you I have barely escaped, but have the pleasure now to find my land improving very rapidly without any other source of improvement, save mere grazing; for I do not manure one acre per year. I am a very bad farmer: I, however, still have hopes, as I am, at the same time, a young hand at the bellows.

I fear I have intruded on your patience already, so I will subscribe myself

A Late Subscriber.

November 17, 1846.

CALICO CORN.

A. W. Townsend, in the Farmers' Cabinet, strongly recommends the above species of corn, especially for culinary purposes. Its most valuable property for this use, and that in which it differs most from other varieties, is in containing a larger proportion of starch and less of oil. Mr. T. says: "The bread of the corn, when mixed and prepared for baking in the same manner as wheat flour, will become light sooner than wheat; and for pies, does not stick together as well as wheat flour. In taste a difference can be discovered. But let a person who has no knowledge of the article make use of the bread, pudding, or pies, which occurred at my own table, and let him be asked of what the article was made, and he would pronounce it wheat—so near does it approach it. I had seventy-two or seventy-three pounds when taken to the mill; and had thirty pounds of superfine and twenty of common flour, and twenty-one pounds of bran."

With us the calico corn was a total failure; it was planted in the same garden with gourd-seed corn that grew to fifteen feet in height; but it was dwarfish, mean, and unproductive. We could make nothing of it, either for man or beast.

VEGETABLE BUTTER.

Butter has hitherto been supposed to be animal matter, and as such, has been rejected by some of the Grahamites; but recent investigations have proved that butter may be produced from hay or grass, without depending upon the cow for its preparation, and it is stated that an expert chemest can produce fifteen pounds of butter from a hundred weight of hay, being nearly twice as much as can be produced from the milk of a cow during the consumption of an equal quantity of hay as food. We may, therefore, expect to see butter factories established in competition with the ordinary dairies.—*True American.*

THE CULTIVATION OF EXHAUSTED LANDS.

At a meeting of the Farmers' Club in New York, where this subject was under discussion, Mr. WATSON, an English farmer, spoke as follows:

"Three hundred bushels of lime put on an acre of the red soil of Brunswick, New Jersey, I have found to render it fertile. Some men talk of forty bushels of lime on an acre! I put thirty-five bushels on one-eighth of an acre of that soil, planted various vegetables, had fine crops. The radishes were very remarkable for their fine growth and *crispness*. All the vegetables were fine. The neighboring land having no lime, craked in dry weather and a plough could not be made to enter it, while the limed section was light, loose, pulverized and stood the drought well—never flagged in their growth in the hottest season of the year. On the sandy lands of Long Island I would put two or three hundred bushels of clay—that will make it hold water. Marl is still better if they can get it. Take out the muck and freeze it for one winter—fat muck is best; it will hold water best. But on the poor land put lime. The vegetable power is etherial. All land that cracks under heat ought to have three hundred bushels of lime on an acre! In my young days I was on a farm which yielded forty bushels of wheat on an acre, (in England.) At length it began to fail.—Couch grass filled the soil. I then began to burn the sod, couch grass sod. I paced the field, began my fires with wood, put on the dried sods, kept the fires supplied, and so burned off the whole field of thirteen acres. I spread the ashes over that field, cultivated it with oats and found that the oat stalks grew as thick as my little finger, with fine long, large heads, but no oats in them at all. I hooked up this crop of straws with the scythe, and put them into my manure heap. Next year I planted turnips on this field and had turnips of—some of them—fourteen pounds weight. I sold that crop for thirteen pounds sterling an acre! The next year I planted barley on it, and had sixty-four bushels of barley on an acre, which I sold for ten shillings sterling a bushel! You see that I had too much ashes at first on the field—there was enough for a much greater farm. In Montgomery county I have worked land, and spaded it deep, covering in manure as I dug. There my marrowfat peas grew as high as my head, and in this well spaded earth they stood drought perfectly. Paring and burning the surface of soil answers the same purpose as liming it, and it destroys all the weeds, and it gives you a pure soil! For fire prepares well the proper food of plants! I say, put cold manures on hot soils, and hot manure on cold ones. By making land light and loose, you may almost do without manure. I have traced in a well spaded light black soil—the roots of a cabbage running three feet! Now, with short roots, as is often the case, the cabbage would not reach the fiftieth part of the nourishment which it does with those extended roots! The potato becomes waxy when planted in close, stiff clay soil. The potato cannot make room for its growths—its roots cannot force the supply of proper nourishment into it, and of course it becomes waxy. Let the soil be loose and light and the potato is fine and mealy.

"I spoke of paring and burning land. If I had put the ashes on my whole farm instead of thirteen acres, I should have cleared two hundred pounds sterling more than I did. Soil must be tilled light. Rain does no harm if it can sink through; but where it finds the soil close it stands in all the little hollows, and there you can see how it injures plants. The soil must let the waters sink through it."

TO PREVENT THE SMOKING OF A LAMP.

Smoke is the result of imperfect combustion. Combustion is always imperfect when more matter is decomposed, than is consumed. This is evident from the fact that smoke may be collected and *burned*. To prevent the smoking of a lamp, therefore, it is only necessary to prevent the decomposition of too much oil. This is done by *lowering* the wick till the blaze terminates without smoke. A little care in *trimming* a lamp will save expense, (an unnecessary waste of oil,) prevent the blackening of the ceiling, and the offensive and unwholesome smell occasioned by the smoke of a lamp.

ONE WHO KNOWS.

IMPORTANT TO HOUSEKEEPERS.

A lady in Batavia, New York, has discovered a new method of washing clothes, which she highly recommends. We copy it from the New York Tribune:

"WASHING CLOTHES.—I have lately found a new way of washing, which I think is a great help, although I never saw it in print. It consists in using turpentine. My mode of using it, is to take the men's week shirts Sunday evening, and put them into cold water to soak until morning, when I place them in a chaldron kettle, with good suds, and add the turpentine, and set them boiling till after breakfast, say one hour. I then take them into a barrel and pound them hard; rub them on a washboard; soap them, and lay them by till their time comes to boil again, and spread them on the grass. I use two table-spoonfuls of turpentine to three or four pails of water."

For the Southern Planter.

WHITE BUTTER.

Being asked the cause why butter is white in winter, I have reflected and noticed until I can with certainty give the cause. For years it has been ascribed to the change of food, while if the food influenced the color, it should certainly be white in summer and yellow in winter. What is there in the nature of shucks, corn, fodder or hay, of a bleaching nature? Nothing. And what in green grass, save a short time during the flowering season, to make it yellow? Nothing. The cause, therefore, must be of another kind, which any one can test who desires to be convinced. Take a pot of cream and let it stand and turn naturally, and the butter will be yellow. Bring it into a room heated with fire and it will be not so yellow. Bring it to the hearth, and the color will be a pale yellow; let it feel the heat some, and there turn, and the butter will be almost white; let it set on the hearth while collecting, and heated smartly, to finish off the turning, and it will be as white as lard. Thus it is clear that it is *bleached* by *artificial heat*, and not at all affected by food. But, says your fair readers, if artificial heat bleaches butter, and it cannot be made to turn without, how will it be remedied? That, dear ladies, is another question, and one I did not promise to solve. But do not cook your cream and you will not have lard certainly. A notion prevails that there is butter in milk; it is all in the cream. Some add the milk and cream of the day it is churned; it does not turn well, and consequently the butter cannot come.

J. H. D. Lownes.

SWINEY.

BY J. BURTON.

I have a recipe for curing the swiney that I got hold of the other day, accidently, just in time to cure a horse of mine that was taken very lame. And by-the-by, I got it for the trifling sum of six bits. I look upon it as being ahead of any thing of the kind that is going; two or three applications baing sufficient for my horse, and he was apparently well in two days.

Take the proportion of one pint of spirits of turpentine, one ounce of Spanish flies, half a pound of lard, half a pound of rosin. Melt the lard and rosin together; when partly cool, put the other two ingredients in, and shake till thoroughly mixed.

I suppose that it is always well to bleed for the swiney the first thing. To apply the mixture, shake it well, and rub it in well with the hand, so as to get it into the hair thoroughly. Apply it freely to the part affected once in two days. In hot weather let the animal stand in the sun; in cold, heat it in with a hot iron. It is perfectly safe and sure, and leaves no mark other than to take the hair off, which comes on again directly.—*Prairie Farmer.*

TENDENCY OF LIME TO SINK BELOW THE SURFACE OF THE SOIL.

It is remarked by Dundonald, in his "Treatise showing the intimate connexion that subsists between Agriculture and Chemistry," that lime is known to have a tendency to sink below the upper surface, and to form itself into a regular stratum between the fertile and the unfertile mould. After breaking up pasture ground that formerly had been limed on the sward, it is frequently observed in this situation. This has been generally ascribed to its specific gravity, and to its acting in a mechanical manner. In gravelly, or sandy soils, there can be no doubt but the diffusibility and smallness of the particles of lime will induce it mechanically to sink through the larger particles of the sand or gravel, and to remain at rest on the more compact stratum which may resist its passage.

When lands of this description have been limed, and kept constantly under annual crops, the greater mechanical process of the plough will operate against the lesser one of subsidence, and keep the lime diffused through the soil; but in clayey or loamy soils, which are equally diffusible with lime, and nearly of the same specific gravity, the tendency which lime has to sink downward cannot be accounted for simply on mechanical principles.

In lands of this description, under the plough, the lime is dispersed or mixed with the soil, under such time as these lands are laid down with grass seeds. After remaining in this situation at rest for a certain number of years, on breaking up, a floor of calcareous matter will be found lying immediately beneath the roots of the grass.* This effect, contrary to the general opinion of its being disserviceable, is of great utility, as the staple or depth of the soil is always increased and rendered less retentive of water in proportion to the distance which the lime penetrates downwards and thus by increasing the depth of the sod a greater scope is afforded for the expansion of the roots and nourishment of vegetables.—These effects of lime in soils, except in those that are gravelly or sandy, cannot be accounted for simply on mechanical principles, but may probably be explained on such as are chemical.

COPYING LETTERS.

A correspondent of somebody's paper, gives a very simple process for taking copies of letters

* Has this fact generally been observed by American farmers, who have given their land heavy dressings of lime? If so, to what cause do they attribute it? Have they derived any advantages thereby in clayey soils?

without the expense of a copying press, as follows: "A strip of muslin attached to a wooden roller, and costing certainly not more than twelve cents, answers every purpose. The paper, after being properly wetted, should be placed between the muslin and the roller; and by merely rolling the roller up, consequently pressing the paper against the letter, will take a perfect impression from it. The time necessary for doing it is also shortened. The old iron presses are very expensive and frequently break or otherwise get out of order, and will not work, whereas, the other method is so simple in its operation, and so quick and effective, that we are persuaded that it only requires to be generally known to be brought into use by all, and by a great many who have not felt themselves able to purchase such a machine. It is a great saving for the clerks, and a great many merchants who have now their copying done by hand, will adopt this method when once it becomes known.—*Scientific American.*

BISCUITS.

French Rolls, or Twists.—One quart of lukewarm milk; one tea-spoonful of salt; a large tea-cup of home-brewed yeast, or half as much distillery yeast; flour enough to make a stiff batter; set it to rise, and when very light, work in one egg and two spoonfuls of butter, and knead in flour till stiff enough to roll; let it rise again, and when very light, roll out, cut in strips, and braid it. Bake thirty minutes on buttered tins.

Raised Biscuit.—Rub half a pound of butter into a pound of flour; one beaten egg; a tea-spoonful of salt; two great spoonfuls of distillery yeast, or twice as much home-brewed; wet it up with enough warm milk to make a soft dough, and then work in half a pound of butter; when light, mould it into round cakes, or roll it out and cut it with a tumbler.

Very Nice Rusk.—One pint of milk; one coffee-cup of yeast, potato is best; four eggs; flour enough to make it as thick as you can stir with a spoon; let it rise till *very* light, but be *sure* it is not sour; if it is, work in half a tea-spoonful of saleratus, dissolved in a wine-glass of warm water; when thus light, work together three-quarters of a pound of sugar and nine ounces of butter; add more flour, if needed, to make it stiff enough to mould; let it rise again, and when *very* light, mould it into small cakes; bake fifteen minutes in a quick oven, and after taking it out, mix a little milk and sugar, and brush over the rusk, while hot, with a small swab of linen tied to a stick, and dry it in the oven. When you have weighed these proportions once, then *measure* the quantity, so as to save the trouble of weighing afterward. Write the measures in your recipe book, lest you forget.

Potato Biscuit—Twelve pared potatoes boiled soft and mashed fine, and two tea-spoonfuls of salt; mix the potatoes and milk, and half a tea-cup of yeast, and flour enough to mould them well; then work in a cup of butter; when risen, mould them into small cakes, then let them stand in buttered pans fifteen minutes before baking.

Crackers.—One quart of flour, with two ounces of butter rubbed in; one tea-spoonful of saleratus in a wine-glass of warm water; half a tea-spoonful of salt, and milk enough to roll it out; beat it half an hour with a pestle, cut it in thin, round cakes, prick them, and set them in the oven when other things are taken out. Let them bake till crisp.

Hard Biscuit.—One quart of flour, and half a tea-spoonful of salt; four great spoonfuls of butter rubbed into two-thirds of the flour; wet it up with milk till a dough; roll it out again and again, sprinkling on the reserved flour till all is used; cut into round cakes, and bake in a quick oven on buttered tins.

Sour Milk Biscuit.—A pint and a half of sour milk, or buttermilk; two tea-spoonfuls of salt; two tea-spoonfuls of saleratus, dissolved in four great spoonfuls of hot water; mix the milk in flour till nearly stiff enough to roll, then put in the saleratus, and add more flour; mould up quickly, and bake immediately; shortening for raised biscuit or cake should always be worked in after it is wet up.

A Good Way to Use Sour Bread.—When a batch of bread is sour, let it stand till very light, and use it to make biscuit for tea or breakfast, thus: Work into a portion of it, saleratus dissolved in warm water, enough to sweeten it, and a little shortening, and mould it into small biscuits, bake it, and it is uncommonly good. It is so much liked that some persons allow bread to turn sour for the purpose. Bread can be kept on hand for this use any length of time.

WONDERFUL INVENTIONS.

A correspondent of the New York Tribune, writing from Worcester, Massachusetts, gives the following account of the fruits of Yankee skill and ingenuity:

"There are two machinists there, whose presence there might give some distinction to Norwich, though their genius has been exercised on very different objects: one is the inventor of that most extraordinary piece of mechanism, employed with a wonderful saving of labor, not in making but in papering pins! Could you suppose that it would ever have entered into the imagination of the most dreamy enthusiast, that he could contrive a machine, whereby he could throw in any quantity of pins, in mass, all heads and points, and have them come out, not only perfectly straightened, but actually papered, three widths of paper at a time, with nothing remain-

ing to be done but to fold up the papers of pins all ready for sale! Well, that extraordinary piece of mechanism has been invented and put into practical use, by this Norwich machinist. How much more useful than all the jugglery of Herr Alexander, wonderful, truly, as that is! But he has not been satisfied with this achievement. He has now invented a machine, whereby scythes, instead of being hammered out with trip-hammers, (itself a great saving of labor,) will be rolled out from the bar of iron, perfectly made at one operation, except turning the heel by a second one; the blade of the scythe will in all else be complete, ready for tempering and grinding. The inventor has spent two years in bringing it to perfection. I heard the Editor of your Farmers' Library catechising him very closely all about it, and doubt not he will give a more particular description of the improvement and saving of labor effected by his curious machine for making scythes at a single heat.

PRODUCTIONS OF THE UNITED STATES.

The Patent Office Report furnishes the following important information:

Wheat, oats, rye, Indian corn, potatoes, hay, and tobacco are raised in every State and Territory of the Union.

Barley is raised in all except Louisiana.

Buckwheat is raised in all except Louisiana and Florida.

New England, New York, New Jersey, Pennsylvania, Michigan, Ohio and Wisconsin do not raise cotton.

The States that do not raise cotton, together with Delaware, Maryland and Indiana, do not raise rice.

Every State and Territory except Iowa, does raise silk.

Every State except Delaware makes sugar.

N. York raises the most barley, viz: 1,802,382 bushels.

New York the most potatoes, viz: 20,553,612 bushels.

N. York raises the most oats, viz: 24,907,553 bushels.

New York raises the most hay, viz: 4,295,536 tons.

Ohio the most wheat, viz: 18,786,705 bushels.

Pennsylvania the most rye, viz: 8,429,226 bushels.

Pennsylvania raises the most buckwheat, viz: 6,408,508 bushels.

Tennessee raises the most Indian corn, viz: 67,838,447 bushels.

Virginia the most flax and hemp, viz: 31,726 pounds.

Kentucky the most tobacco, viz: 72,322,543 pounds.

Georgia the most cotton, viz: 148,175,128 pounds.

South Carolina the most rice, viz: 66,892,807 pounds.

Louisiana the most sugar, viz: 37,173,590 pounds.

North Carolina the most wine, viz: 17,347 gallons.

These are curious facts, as showing the variety of agricultural productions and the vast amount of these productions.

From the American Agriculturist.

REMOVING STAINS FROM CLOTH.

Nothing is more common than the soiling of clothes by grease, oil, or fat, acids, inks, sauces and preserves, coffee, varnish, white lead, paint, &c. All of these, if taken in time, may be removed without much difficulty. As the whole subject is too lengthy for a single article, I will treat them in numbers.

1. *Stains from Oils, Fats, or Grease.*—Removed by soap, chalk, white clay, French chalk, or ox gall. They most frequently occur on carpets and articles of dress. They give a deep shade to the ground color of the goods, and continue to spread for some time after the accident has happened. They hold fast whatever dust falls upon them. On a very dark ground the stain becomes lighter than the rest of the surface, because the dust which rests on it is lighter. Alkalies dissolve most readily these stains, but there is great danger of injuring the more delicate colors; hence they should not be used except by experienced scourers.

Any good hard soap will answer to remove the stains from blacks, blues, browns, drab, invisible green, &c., by means of hot water, and the soap and water may be removed by a sponge, rubbing the nap in the right direction. In any delicate colors, if soap be used we should always first try a piece of the same kind of goods with the agent, before using it on the article to be cleaned.

In all cases, where several colors are involved in the stain, as in carpets, it is preferable to use the white clay or French chalk. The latter is better, on account of being easier to remove, although either will answer the purpose, and, in the absence of both, common chalk will do as a substitute. The mineral should be reduced to a fine powder, and made into a thin paste with water, and spread over the stain, and when dry, removed by whipping with a rattan, and using a brush. The oil having greater affinity for the chalk than for the goods, is thus taken up and removed. If the stain be not removed by the first trial, the process should be repeated.

SOILING.

With respect to the soiling of cattle, it is the case with some farmers that their calves are never turned into the field until they are a year old, and that many cattle may be said to be wholly reared in the stall. The fat stock, which are sent to the Smithfield cattle show, and much of what is designed for the market, are kept altogether in the stalls or in loose boxes, as they are here termed.

In regard to milch cows in the country, they are commonly depastured; but in the large dairy establishments of London and its vicinity they are wholly soiled. After being once placed in the stalls, they are never untied, excepting in some cases where they are loosened for the purpose of being watered, until their milk ceases to be sufficient to meet the expense of their keeping. They are then fattened and sold to the butcher. The feed is cut and daily brought to them in a green state, sometimes from a considerable distance. In such a city, cows, if kept at all, must be kept in the house; and during the season when green feed is attainable, it is of course obtained, for its advantages in increasing the milk.

Two great advantages of soiling cattle are, first, the increase of manure; and second, the keeping of more cattle on the same land.

The increase of manure from soiling is very far beyond what would be supposed by any one not experienced. Where proper provision is made for this purpose, all the manure of the animals is saved, instead of being left and scattered either on the roadside, or in the fields, to be dried up by the sun, or washed away by the rain; and it is at hand to be applied as the farmer shall choose. It gives him an opportunity of converting all his long litter and the straw of his farm into the most valuable of manure, by using it as an absorbent for a large amount of the liquid portions of the excrements of his cattle. It affords him likewise the power, by properly constructed gutters and tanks, of saving his liquid manure—the best portion, if well managed, and, according to the estimation of many eminent farmers, compared with the solid portions of the manure, in point of value, full two to one.

The next great advantage of soiling is the increased stock which may be kept upon the same land. From the various facts which have come under my observation, where the soil is carefully and judiciously cultivated, and duly manured, and a proper rotation observed, I believe that on land under artificial grass or esculent crops, three animals may be soiled where one only is now grazed. I believe this may be done with equal or superior advantage to the health and thrift of the animals, and that, in most cases, the increase of valuable manure obtained in this way will much more than pay for any extraordinary trouble of attendance.

Another advantage is in the saving of interior fences upon a farm. Where cattle are kept constantly in barns or yards, the necessity of enclosures is of course done away; and, separate from the saving of expense in the case, the convenience of cultivating in long lines and open fields, the saving of land, and the superior neatness of the cultivation, are great and obvious advantages.

The trouble of cutting and carrying the fodder for a large stock presents to many persons an insuperable objection to soiling. This, however, must depend on local circumstances, which every farmer must take into consideration for himself. Without doubt, in some cases it might be such as to render the experiment ineligible. The difficulty of finding a supply of green feed sufficiently early in the spring, is likewise made an objection. This may be an objection in many localities; but in England proper, where an ample supply of Swedish turnips, carrots, and mangel-wurtzel are grown, and where winter vetches, rye, Italian rye grass, and lucerne, afford an early cutting, this objection does not apply. It has been objected that cows soiled will not give so much milk as when grazed; on the other hand, the testimony of some individuals, with whom I have become acquainted, establishes the contrary. At Teddesley, in Staffordshire, where a large stock is soiled, the opinion is that the cows do not give so much milk as when grazed. At Glasnevin, Ireland, the opinion of the intelligent superintendent of that establishment is that their production of milk under the soiling system is much greater than when grazed. In a trial lately reported upon the comparative advantages of feeding cows with malt or barley and other articles of food, it was found that, upon being taken from the fields to the stalls, the milk of these cows was considerably increased. It is difficult to make a comparison in the case upon which the matter may be confidently determined. The quality of milk must, to a degree, depend upon the nature, and its quantity upon the supply, of the food which the animal receives. Some animals naturally and constitutionally, from peculiarities or circumstances which have never yet been explained, secrete milk of a much richer quality than others. The Alderney or Guernsey cows are remarkable examples of this kind, their milk being much richer than that of any other breed of cows known. Yet that the quality of the milk is not wholly constitutional, but depends, to a considerable degree, upon the nature of the food on which the cow is fed, is well established. Its quantity, of course, depends upon the supply of food which the animal receives. It seems to be determined by experiments, which have been made here that, of all food, grass fed green will

produce the largest secretions of milk. It is found, likewise, by experiment, that, in order to the largest secretions of milk, the temperature in which the animal is placed must be comfortable; she must be free from external annoyances; and she must be "at ease in her mind." These things being equal, it is not easy to see why, under an ample supply of fresh grass eaten with a good appetite, there should not be an equal production of milk in the stall as in the pasture.

Colman's European Agricultural Tour.

For the Southern Planter.

GRAIN—SHEEP.

It is probable that the potato crop will be affected with rot for many years, and if so, wheat and other grain will most probably continue to bear a good price. Wheat will bear land carriage the greater distance, because of its commanding the better price. Corn and other grain will bear land carriage only a short distance, because of their commanding an inferior price.

Indian corn being the more certain crop, I am of opinion that persons having lands adapted to its growth and convenient to shipping, should now plant it largely for exportation. Land well adapted to the growth of wheat should, of course, be cropped with this at any reasonable distance from water carriage. There are some sections of dark alluvial lands on James River which are not adapted to wheat, but are well adapted to rye, and, therefore, should be sowed in this crop, if the owner will take the precaution to keep the rye at a respectful distance from the wheat, particularly after harvest. What the rye crop requires for its perfection, is saltpetre, and all lands containing vegetable mould have this salt.

I repeat that it is my opinion grain is to sell well for many years to come, and, therefore, hope that more grain and less tobacco will be made. It seems to me that any person who would now make tobacco, where his lands are adapted to grain, must make his estimates upon random principles. Tobacco must sell for a very low price for several years to come, although but little shall be made.

But my main object in taking up my pen, was to say something on the subject of sheep, and in the outset I will say in broad terms, that I believe the grazing and rearing of sheep on mountainous lands is now the best prospect for profitable investment I can bring my mind to bear on.

Remember, I speak of *mountainous lands*, and I will give reasons for its preference.

1. The atmosphere, vegetables, and water are most healthy on mountains, for all manner of quadrupeds, but especially for sheep, and their species.

2. Nature will here place a coat of wool on the body of the sheep adapted to the climate he is in—for the colder the climate the more wool is required for comfort.

3. The land costs but a trifle.

4. Every year the sheep are on such lands the pasturage is improving.

5. The shepherd can, whilst following the flock, carry an axe and be continually improving the range by cutting bushes, and deadening and trimming trees.

6. So long as those grounds are pastured, no timber can ever grow when once cut down or belted, for the sheep will eat every sprout as they appear.

7. The highest mountain in Virginia is the Cold Mountain in the county of Amherst, and on this there is now to be seen the best sod of greensward and white clover in Virginia, and perhaps equal to any in the world.

8. All the above being facts, sheep must here, and on all such lands, grow to large size, fatten kindly, and yield a heavy coat of wool.

I am glad to learn that a gentleman of Lynchburg intends, next spring, to put a flock of one thousand, on the Blue Ridge, and as I intend to put about as many on the Cold Mountain at the same time, I challenge him, in honorable rivalry, to face me like a man, and name his terms. My shepherd, too, is a man of parts and chivalrous to a nicety, and as the two shepherds will be in full view of each other (only about three miles apart) he will be watchful and see that no man shall beat him in industry and neat management. And for all this a coat of many colors shall be his extra.

Some seven or eight years past I grazed a flock of about four hundred for two years in succession on and above the Cold Mountain, and when they returned home, in the fall, they were as fat as I could desire.

It is my intention to make a few acres of meadow near the top of the mountain, the hay from which, in addition to the grazing in and out of the meadow will keep my flock till Christmas, as well as in early spring. The flock will be wintered at my residence.

I will close with another eulogy on the mountains of Amherst. Where the lands are either much elevated or rich, neither broom or sedge is to be seen; neither is there a brier, or bur, or needle, or indeed any other pest to be found.

Za. Drummond.

December, 1846.

From the Keystone.

NEW BEEHIVE.

I have become very much interested in the subject of bees, and my inquiries have led me to the conclusion, that every farmer in our goodly

land should know how to manage these useful insects. To the naturalists they are a highly entertaining race, on account of their peculiar manners, habits and instincts, and they are highly important to the rural economist by reason of their valuable produce. The term honey bee, as it is generally used, comprehend the queen bee or female; the male bee or drone, and working bee or neuter. The natural history of the common bee has been more fully considered than that of any other creature of the insect tribe; and if we except the silk-worm and coccus employed in dyeing, there appears to be none more deserving of the regard which is paid to it. As an object of advantage, by the common consent of mankind in all ages, the honey bee has been deemed of sufficient consequence to demand grave and particular attention.

There is in every hive, or colony, three kinds of bee, as I have stated—the queen, however, is longer, has shorter legs, shorter wings, and is more active than the others. She is armed with a sting, as every school boy knows. The drones have large eyes and are destitute of a sting. The working bees are armed with a power sting, which they frequently use in the neighborhood of their hive.

The sting of the bee is a curious weapon, adapted to the industrious habits of its life, which expose it to a multitude of dangers. It is not my purpose, however, to write a history of the bee, that has been amply attended to by different observers, and it is a surprising fact, that there have been seventy-seven ancient, and four hundred and forty-four modern authors, who have written on the habits, manners, instinct and production of this wonderful little animal, the bee.

My design in this paper is to call attention to "Martin's Patent Bee House or Palace," to which I adverted in a former letter. The advantage of this elegant construction is, that the bee is protected from the bee moth or worm, which is often so fatal to the welfare and even existence of the bee.

In the arrangement adopted, simplicity is predominant, and the house, is a non-swarmer, a self-cleanser, and what is particularly advantageous, the honey may be taken at any time, without resorting to the barbarous practice of smoking and suffocating. The whole expense of this simple apparatus, which can be made by the dullest carpenter, is but a trifle, and so essential has saccharine matter become, on all that relates to domestic economy, that I deem it highly important that every farmer and cottager should become acquainted with its merits. The poorest man in the nation, can with this contrivance raise honey enough for his own use, and have some to spare for his neighbors.

In fact, in the hands of a judicious Apiarian, "Martin's Bee House" may become a profitable branch of rural enonomy, for by its use, honey can be obtained with but little trouble to almost any amount! It is known that whole families have derived their principal support from raising bees, and whatever is advantageous to the great mass of laborers and toilers, becomes worthy of consideration to the philosopher, patriot, philanthropist and statesman. I may safely aver, that by this simple structure, every farmer in the Commonwealth could raise enough honey, as to almost entirely supersede the use of sugar and molasses, for it is equally as pleasant, and as equally suitable for most all domestic purposes as the two latter. Honey, as a mere article of household use, is very valuable, and as a medicinal agent, it has in many cases, desirable and useful properties. It shows how important this article may become. I find it recorded that honey to the value of thirty-three thousand dollars was received in the fall of 1841, at Buffalo, which had been sent from the lakes to that city. Why may not all the farmers and citizens of Pennsylvania take hold of this subject? Surely it is eminently deserving of their consideration.

From the Farmer's Monthly Visitor.

FACTS IN NATURAL HISTORY.

BY PROFESSOR J. J. MAPES.

I mention these facts only in the hope of showing that there is pleasure in studying the sciences, and when we come to natural history we shall find the study of that still more amusing. The animal and vegetable worlds are well worthy of observation. Probably you all know what is meant by a *cycloid*. If we make a spot in the periphery of a wheel, travelling on a plane, the figure which that spot describes is a cycloid. Now there is no figure in which a body can be moved with so much velocity and such regularity of speed, not even the straight line. Mathematicians discovered this not many years ago; but Nature's God taught it to the eagle before mathematics were invented; and when the eagle pounces on his prey, he describes the figure of a cycloid.

A globe placed in water, or in air, in moving meets with resistance, and its velocity will be retarded. If you alter the globe to the form of an egg, there will be less resistance. And then there is a form called the *solid of least resistance*, which mathematicians studied for many years to discover; and when they had discovered it, they found they had the form of a fish's head! Nature had "rigged out" the fish with just such a figure.

The feathers of birds and each particular part of them, are arranged at such an angle as to be most efficient in assisting flight. The human eye has a mirror on which objects are reflected, and a nerve by which these reflections are con-

veyed to the brain, and thus we are enabled to take an interest in the objects which pass before our eye. Now, when the eye is too convex, we use one kind of glasses to correct the fault; and if it be not convex enough, or if we wish to look at objects at a different distance, we use glass of entirely another description.

But, as birds cannot get spectacles, Providence has given them a method of supplying the deficiency. They have the power of contracting the eye, of making it more convex, so as to see the specks which float in the atmosphere, and catch their food; and also of flattening the eye, to see a great distance, and observe whether any vulture or other enemy is threatening to destroy them. In addition to this they have a film or coating which can suddenly be thrown down over the eye to protect it; because, at the velocity at which they fly, and with the delicate texture of their eye, the least speck of dust would act upon it as a penknife thrust into the human eye. This film is to protect the eye, and the same thing exists, to some extent, in the eye of the horse. The horse has a large eye, very liable to take dust. This coating, in the horse's eye, is called the haw, or third eyelid, and if you will watch closely, you may see it descend and return with electric velocity. It clears away the dust and protects the eye from injury. If the eye should catch cold, the haw hardens and projects, and ignorant persons cut if off, and thus destroy this safeguard.

You all know, if you take a pound of iron and make of it a rod a foot long, what weight it will support. But if it be a hollow rod, it will support a weight many times greater than before. Nature seems to have taken advantage of this, also, long before mathematicians had discovered it, that all the bones of animals are hollow. The bones of a bird are large, because they must be strong to move their large wings with such velocity; but they must also be light in order to float easily on the air. Birds also strikingly illustrate another fact in natural philosophy. If you take a bag, make it air tight, and put it under water, it will support a large weight, say a hundred pounds. But twist it, or diminish the air in it, and it will support no such weight. Now a bird has such an air bag.—When he wishes to descend, he compresses it, and falls rapidly; when he would rise he increases it, and floats with ease. He also has the power of forcing air into the hollow parts of the body, and thus to assist his flight. The same thing may be observed in fishes. They also have an air bag to enable them to rise or sink in the water till they find their proper temperature.

If they wish to rise, they increase it; if they wish to sink they compress it, and down they go. Sometimes the fish in sinking makes too strong an effort to compress his air bag, and bursts it; then down he goes to the bottom, and there remains for the rest of his life. Flounders and some other fish have no air bag, and so they are never found swimming on the surface, but must always be caught on the bottom.

In this way are the principles of science applied to almost every thing. You wish to know how to pack the greatest amount of bulk in the smallest space. The forms of cylinders leave large spaces between them. Mathematicians labored a long time to find what figure could be used so as to lose no space; and at last found that it was the six-sided figure, and also that three planes ending in a point formed the strongest roof or floor. The honey bee discovered the same things a good while ago. Honey-comb is made up of six-sided figures, and the roof is built with three plane surfaces coming to a point.

If a flexible vessel be emptied of air, its sides will be almost crushed together by the pressure of the surrounding atmosphere. And if the tube partly filled with fluid be emptied of its air, the fluid will rise to the top. The bee understands this; and when he comes to the cup of the tall honeysuckle, and finds that he cannot reach the sweet matter at its bottom, he thrusts in his body, shuts up the flower, and then exhausts the air, and so possesses himself of the dust and honey of the flower. The feet of flies and lizards are constructed on a similar principle, and they thus walk with ease on glass or a ceiling. Their feet are made so as to create a vacuum beneath them, and so they have the pressure of the atmosphere, fifteen pounds to the square inch, to enable them to hold on. The cat has the same power to a less extent.

Plants require the sunlight, and some flowers turn themselves towards the sun as it travels round from east to west. The sunflower does this, and so does a field of clover. These facts, though we have not yet got at the reason of them, are still extremely interesting.

SHAKER FARM.

The present settlement of Shakers, or United Brethren, at New Lebanon, was the first spot on which this sect ever located. They commenced here about forty years ago. The society consists at present of about six hundred persons, more than half of whom are females. From small beginnings they have acquired large possessions, holding at this time not less than seven thousand acres of land, mostly lying contiguously. We spent a few hours examining various objects connected with this community.

Their buildings are all built in the most substantial manner, and are constructed with particular regard to convenience. One of their barns is considered in all respects the best contrived and the most perfect of any we have seen. It is one hundred and forty-one feet long, fifty feet

wide, and twenty-five feet high in the walls. It consists of three stories. The basement is devoted to the stock and the storage of vegetables in winter, the second and third to hay and grain. The main entrance for produce is in the third story, which, from the barn being on the side of a hill, is nearly level with the ground. A floor runs lengthwise through the barn on this story, and the hay and the other articles are pitched downward into the bays on each side. The barn is capable of containing two hundred tons of hay, and it is so disposed that scarcely any of it has to be raised higher than the wagon from which it is thrown. Only two hands are necessary to unload—one to pitch off, and one to keep the mow level, thus saving a great amount of labor, compared with what is required in barns of common construction.

The apartments for the cattle are complete. The walls, which are of very solid stone-work, are plastered, and though cool in summer, we should suppose they would be so warm in winter that no frost would be found there; windows in each side permit free ventilation. The fodder is thrown into racks for the stock from the "feeding floor" in the second story. In front of the racks are mangers to catch any straw that drop from the racks, as the fodder is pulled out by the animals. An open space is left between the racks and mangers, which allows the animals ready access to fresh air, prevents the hay in the racks from being made unpalateable by their breath, and gives room also to slip in boxes, when it is wished to feed with slops or roots. The man who had charge of the stock said he could feed and take care of a hundred animals in this barn, with less labor than he could manage twenty in any other barn he ever saw. The cattle stand on a platform with a gentle slope, which renders it easier to keep them clean and dry. The cows are tied with chains around the neck, and are always milked in their stalls, summer and winter. They are milked exactly at fixed times. So punctual are the attendants to this, that a clock is kept in the apartment and the herdsman told us at what moment the cows would be in their places.

The barn yard is so contrived that none of the manure is wasted. It is kept littered with straw and such waste matters as can be procured, and the manure from the stalls is made into compost with that in the yard, mixed with muck, and is not used until it has become fine by decomposition.—*Cultivator.*

WHITE AND YELLOW INDIAN CORN MEAL.

The following observations in relation to Indian corn meal were communicated to the Journal of Commerce by a physician in the city of New York:

Yellow corn and white corn are not the same in quality, although they are identical in kind, and may grow in the same field. The nutritive qualities of the yellow corn surpasses that of the white, and that is a good reason why the common sense of the people, or their ordinary experience, assigns to it a preference, independently of its mere looks.

The investigations, or vegetable chemistry have revealed to us many important and interesting facts. By the aid of analysis, it has been ascertained that butter, in a pure state, is combined in all, or nearly all grapes, seeds and grains. Out of one hundred weight of yellow Indian corn meal, for instance, a good chemist can extract from eight to ten pounds of butter. Out of the same weight of white Indian meal, six or eight per cent. of butter can be made, thus proving it to be in that proportion, so much the less nutritious. Of the nutritious quality of Indian meal, any one can satisfy himself by attending to the usual process of cooking it.—When it is boiled thick, as in making mush, if a crust adheres to the side of the vessel, on cooling, it is apt to peal off, of itself, owing to this fatty material in it.

It has furthermore been proved, that the butter, obtained from the cream of milk, is not animal secretion, but that it previously existed in the pure and original state, in the hay or food of the cow; and a skilful chemist can make more butter out of a hundred weight of hay, than a cow can, as the cow must appropriate a considerable share of it for the uses and necessities of her organization. Give a cow a hundred pounds of hay, and she will render back eight pounds of butter, but an expert chemist can realize twelve or thirteen pounds out of it.

In the choice of the various articles of food, to suit our taste on particular occasions—to correspond to the multiplied emergencies of life—the adaptations of the multifarious sorts and qualities of food, display infinite wisdom and goodness. In sickness, in health, in toil, while our means abound, and when they are scanty, we demand different kinds of food, and different varieties of the same kind, to satisfy our real and imaginary wants. Of the grain stuffs, rice contains the least fatty material, and Indian corn the most, and ranging between these two extremes, we have wheat, oats, rye, barley, &c., all different, and yet all of them capable of being applied to the respective conditions which are suited to them.

It is on account of the fatty nature of Indian corn meal that it is such a strong kind of food, and that persons unaccustomed to it cannot at first endure it. The nations which feed chiefly on rice, are not near so robust as those which use Indian corn, as the blacks of the south mostly do. Persons unaccustomed to this kind of food, therefore, will do best to commence with the white Indian meal, in preference to the yellow,

as it is not so rich; and this preference to the white over yellow has already occurred in England, where the article is new.

There is only one more observation which I wish to make. As Indian corn meal contains so much fat in it, kept too long, it is liable to become rancid, and is then more or less unfit for use. In the shipments made to the West Indies the meal is commonly kiln dried, to obviate as much as possible this tendency to rancidity.—For reasons just detailed, the white meal will keep rather better; and from its being lighter and milder, it is as much preferred for use in warm climates, as the yellow for similar inducements, is in cold.

A GOOD ARRANGEMENT.

In France, all ladies who do not possess a decided ample fortune, make it a point to learn some practical art or business, which, in case of reverses of fortune, they may use to obtain a living. There are said to be six thousand females among the easy classes in this city, who are destitute of any acquirement that could be made available in case of necessity.—*N. York paper.*

From the Maine Farmer.

SUGAR OR MOLASSES FOR PRESERVING MEAT.

The season is approaching when farmers will commence slaughtering and laying down meat, such as beef and pork, for use during the coming year.

Almost every one has some rule by which he governs himself in this operation. The Editor of the Cultivator quotes from the "Montreal Witness" various rules for curing provisions, from which we extract the following in regard to the use of sugar or molasses in preserving meat.

"The use of sugar or molasses is gaining favor among packers, as preserving meat in a superior manner, having a finer flavor, keeping better and never becoming rusty, and however old, never excessively salt. It has been asserted on high medical authority, that the use of sugar in curing meat would prevent that fearful disease, sea-scurvy. It has been used in curing hams for a long period; indeed, a good flavored ham cannot be procured without it; but it is of the greatest importance in curing beef, which is to be kept any length of time, or which is required of a fine flavor. It is used in the first process along with the salt for dried provisions—say one pound of sugar, or one pint of molasses to four pounds of salt. With pickled meats it is used in the last process along with salt, to pack up the meat in the cask, say about half of each, sugar and salt."

In order that our readers may understand what is meant by first process and last process above named, we should say that the manner of curing is as follows: no salt-petre is used. *First.* The pieces must consist of beef, six pound pieces; of pork, four pound pieces. *Second.* The salt must be good, and if salt-petre is desired, but very little should be used. *Third.* The meat must be dry rubbed for three or four days, at least once a day, to extract a certain quantity of water, and to chemically alter the meat. *Fourth.* The meat must be put into pickle so as to cure it sufficiently; in this it should remain ten days, or until it is required to be packed. *Fifth.* It must be well washed with water; if necessary scraped or cut. *Sixth.* Packed away in barrels with coarse salt, and the package filled up with clean pickle. If they are to be dried or smoked, the dry salt is enough.

From the Boston Cultivator.

MANURE AND ITS APPLICATION.

Messrs. Editors,—In your paper of last week, I read the communication on top dressing, with great pleasure. It has been my opinion that much manure is lost by ploughing it in. I have tried several ways, and at several seasons of the year; and I have come to the conclusion that the best time to plough greensward is in July and August, as soon as the crop of grass is gathered.

The best method of manuring is to spread on a good coat of manure after the ground is ploughed, and harrow it in well. If desired, scatter in some turnip seed, and a good crop can be obtained with less injury to the land than at any other time, and they will not come amiss for cattle in the winter and spring.

The next winter the same ground should be ploughed again, and another dressing of manure put on as before, and harrowed in well; and then the seed may be put in with or without manuring in the hill, and a good crop will be obtained.

It should be observed in all cases, that deep ploughing is absolutely requisite to prevent drought in high or clayey land, and to drain off water in low land. By mixing the manure with the soil, as above described, plants have their food all prepared, both for early and late crops.

In an orchard I have tried ploughing in manure, and spreading it on as top dressing, but in no case has it done so well as ploughing first and harrowing in a good coat after. I should think that twice as much benefit is obtained from the manure as by depositing it under the furrow.

In every ploughing, some of the subsoil should be turned up. By pursuing the above method, a farmer, in a short time, would have his whole farm in a good high state for cultivation, and never regret that he has given to his plants the best food, and in the best possible manner.

While speaking of manure, I would say that no farmer should be without a cellar to his barn, and he should house his cattle every night, so as to save all his manure, both liquid and solid. If this was done, and all the bushes, weeds and sods were put into this cellar, and a few hogs, if kept there, would mix it, and when a load of mud should be added, it would help it very much.

In the fall, rake up and put in all the leaves that can be obtained, and they will pay three fold for the labor expended. I make my barn cellar a general deposit for all kinds of rubbish that I wish to get out of sight, and in the spring it comes out good manure, paying me well for my trouble. S. A. Shurtleef.

Spring Grove, Sept. 17, 1846.

From the Alabama Planter.

ROTATION OF CROPS INDISPENSABLE.

The system of agriculture practised by our planters, if system it may be called, is perhaps in no respect more exceptionable than in that of restricting their lands to so limited a variety of crops. On some future occasion we may attempt to show that this stinting of our soil almost to a single product, is extremely injudicious as regards the purposes of economy—that it is rendering us subject to a pernicious system of trade and speculation, and dependant upon strangers and foreigners for the very necessaries of life.

But our present design is to evince that our usual mode of agriculture is a direct violation of the laws of vegetation. It has long since been ascertained that a rotation of crops is indispensable to render soils permanently productive. Nature herself furnishes many clear indications of the importance of this, as in the instance where the removal of a pine forest is succeeded by a growth of oak.

It is not merely the exhaustion of the soil which renders this rotation necessary; there is an actual deposit of noxious materials, ejected from the roots, which renders soils where plants have been long cultivated, less suitable to their continuance in a flourishing condition, than the soil in the same spot was originally.

If the roots of plants be carefully cleaned and immersed in filtered rain water, and the water be frequently exchanged, the plant will continue to flourish; but the water will at length acquire a peculiar tinge and indicate both by smell and taste the presence of noxious matter. But such an exudation will not take place either from the stems or roots in a detached state, only when the plant is in a healthy and flourishing condition.

By this excretory process plants are able to free themselves from any noxious materials which they may happen to imbibe by the roots.

Take the Silex Babylonica (weeping willow) or any plant, wash the roots and separate them into two parts, one of which put into a solution of acetate of lead, and the other into pure water; after a few days the water in the latter vessel will be found to contain a perceptible quantity of acetate of lead. Although the materials thus discharged by the roots are injurious to the plants which reject them, and to all others of the same species, it is not to be inferred that these materials are incapable of supplying salutary nourishment to other kinds of plants; for it is well known that broom rape will flourish in the vicinity of hemp, and tares with wheat.

It has been ascertained that the water in which plants have been kept is noxious to others of the same species, while it produces a more luxuriant vegetation in plants of a different kind.

This affair is still farther illustrated by those circles of verdant grass which are often to be met in old fields. This peculiarity is attributable to successive growths of mushrooms spreading from a central point. The soil which has once contributed to their germination, becomes unfit for the successive production of the same species of the same spot; hence the next year's crop is seen a little removed from the former centre of vegetation. The want of suitable nourishment on one side causes the roots to extend themselves on the other; thus the circle continues to enlarge and extend itself from the centre, while at the same time a luxuriant growth of grass follows, for the soil of the interior circle becomes peculiarly adapted for the culture of grass by the excreted and decayed materials from the mushrooms.

It is perhaps almost unnecessary to add that these facts are of great importance to the practical agriculturist. They must at least convince him of the folly of the common practice of abandoning so much productive land to a fallow state, or according to the usual phraseology, "of leaving them to rest," while they are in reality in the best possible condition perhaps for the cultivation of a crop different from the preceding one.

We might here enlarge upon the final cause of this part of the economy of nature, and show how utterly at variance it is with the policy of our times, which aims to restrict large regions, and even whole countries to the cultivation of a few or perhaps a single product. And evince, too, the detestable character of such policy in setting at naught the dictates of nature and endeavoring to reduce the whole earth into a deplorable mart of trade and speculation. But these suggestions must suffice at present, being intended only as a premonition of the plan of future discussion. H.

IMPROVED WINDLASS FOR WELLS.

This invention consists of two cylindrical drums on one axle, and to each drum is attached a rope by which a bucket is suspended: or a bucket may be connected to one rope, and a counterpoise weight to the other: the two ropes being coiled on the drums in opposite directions, and the two drums being clutched together, so that the ropes may be shortened or lengthened, according to the height of the water within the well, by merely adjusting the relative positions of the drums. This is an excellent invention, and should be extensively known. Invented by Harvey W. Sabin, and entered October 10th.

SOAP AS A MANURE.

T. Dalton, a silk dyer, says, in the London Agricultural Gazette, that he uses 15 cwt. of soap weekly, to discharge the oily matter from

the silk, and forming of itself a kind of soap, the whole of which yields from four to six thousand gallons of strong soap suds per week.—This he has lately applied to his farm, and "its effects are most extraordinary." It has been used only one season, and its results cannot be accurately given, but he considers it more powerful than any other manure.

TO THE READERS OF THE PLANTER.

My connexion with the Planter as proprietor ceases with this number, and although I shall be known hereafter as one of its contributors, I cannot but regret a state of circumstances which has a tendency to sunder the ties that have heretofore connected me with my readers. For six years I have stood in the intimate relation of editor to the farmers of Virginia, and although during that time I have done much to disappoint their just expectations, I have met from them nothing but kindness, forgiveness and compliment.

I have parted with the Planter to Mr. P. D. Bernard, of this city, from whose hands I have every reason to believe it will be issued with a punctuality and ability that it has not heretofore known. The value of a paper to the community, not less than to the proprietor, depends upon the number and the punctuality of its subscribers, and the interest I shall ever take in the agricultural prosperity of Virginia, leads me to hope that her farmers will not permit the only paper in the State devoted to their interests, to languish for want of adequate support.

C. T. Botts.

Having purchased the "Planter," I take this method of informing the public, that it will be issued hereafter *punctually* on the first day of every month. I have made arrangements to secure the valuable services of Mr. C. T. Botts in the editorial department; as well as the aid of a host of contributors, by whose assistance I hope to entitle the work to even more of patronage and celebrity than it has heretofore enjoyed. The paper, under its new auspices, will be forwarded to all of the old subscribers who have not ordered a discontinuance; and to its support, I invoke the patronage of all those who are willing to sustain the only paper in Virginia devoted to the great interests of agriculture.

The work will hereafter be published at one dollar and fifty cents per annum--which may be discharged by the payment of one dollar at any time within six months from the date of subscription. The paper will be enlarged to thirty-two (instead of twenty-four) pages.

P. D. Bernard.

☞All communications on business for the Planter, will in future be addressed to

P. D. Bernard, *Richmond, Va.*

Jan. 2, 1847.

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THE

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CHARLES T. BOTTS, EDITOR.

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